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**EXCAVATIONS ON THE ISLAND  
OF PSEIRA, CRETE**

**BY**

**RICHARD B. SEAGER**

**PHILADELPHIA  
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## EXCAVATIONS ON THE ISLAND OF PSEIRA, CRETE

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### THE DISCOVERY OF THE SITE AND THE SEASON'S WORK.

Our attention was first called to the Minoan settlement on the island of Pseira in 1903, when we learned from a Turkish boatman of the existence there of old walls and potsherds. On visiting the spot it was clear that we had to do with a town similar to that at Gournia, but as Mrs. Hawes was then occupied with the excavations at that site, no trial was made until 1906, when, after a short season at Vasiliki, I crossed to Pseira for three days with twenty workmen. The results of these three days were such that it was decided to make Pseira the objective point of the work in 1907.

I was assisted by Mr. B. H. Berry, who remained through the season, and, in addition to the arduous work of making the plan and keeping an illustrated catalogue of the finds, was able to make some pen and ink sketches of the site, one of which is given in Plate II.

Work began on May 13th and continued until July 20th, making only about eight weeks of actual digging owing to the numerous interruptions caused by church holidays. The lack of water was our greatest difficulty, as it had to be brought by boat from springs on the mainland opposite. These springs, one at the Tholos of Kavousi, the other at the foot of some cliffs to the east, rise in holes dug in the sandy beaches, and in rough weather are entirely submerged. Except on one occasion we were able to keep at the excavations a sufficient supply for two days. Aside from this difficulty the men made themselves fairly comfortable in small bush huts, returning to their villages on Saturday nights to lay in their weekly stock of provisions. A small *quasi* cistern of the Roman period lying on the top of the point in the center of the excavations was converted into a temporary kitchen for our own use, tents having been brought over for sleeping purposes.

### THE ISLAND.

The island of Pseira is a barren mass of rock rising from the sea at a point some two miles off the coast of Crete opposite the plain of Kavousi. Northwards from Pacheia Ammos a chain of rocky hills bounds the Kavousi



valley on the west, descending in great cliffs into the Gulf of Mirabello. At the Tholos of Kavousi this chain, through some convulsion of nature, has been submerged; the isolated mass of Pseira, however, is beyond doubt a continuation of the same system, and rises abruptly from the sea on the western side. The position of the island is well shown in the sketch plan given in Vol. I, Part 1, page 9, of the *Transactions*.

The island measures some two miles north and south and at no point is more than a mile in width. The west coast is formed by a line of huge cliffs, which rise sheer from the sea to a height of 800 feet; on the east the land slopes sharply down to the shore. The eastern coast line is indented by three sandy coves separated from one another by tongues of land, the central one of which juts out into the sea for some two hundred yards. On the top and sides of this narrow point and on the adjoining hillside to the south once lay a flourishing Minoan settlement which evidently owed its existence to the excellent harborage for small craft offered by the sheltered cove on the south side of the point. It is exposed solely to the east, and an easterly gale is a thing of rare occurrence in Cretan waters (Plate III).

On the topmost ridge of the island on the edge of the high cliffs on the west lie the remains of a Roman military camp, probably a beacon station connected with similar posts at Kalo Khorio, Pacheia Ammos, the Tholos of Kavousi and on the island of Mochlos, which lies further to the east. Another small group of buildings occupies the center of the Minoan town on the long point before described, but owing to its limited area, this occupation did but little damage to the earlier structures.

Aside from the harbor the island could have offered but little to attract settlers of any sort even in Minoan days. Although numerous terrace walls show that the hillsides were once cultivated, the area was too small and the soil too scanty to attract an agricultural population. The Minoans were preeminently a maritime people, and all their settlements in Eastern Crete point to communities of traders and seamen rather than to a nation of husbandmen. On a coast affording so few places of refuge to sailing craft a good harbor was of primary importance to such settlers, and that the inhabitants of Minoan Pseira owed their extraordinary prosperity to their sheltered port seems very probable. Gournia, which had no harbor, never attained the same wealth or showed such signs of close intercourse with Knossos, the capital city of Crete, although it was probably the local seat of government. Even in the present day the port of the ancient Minoan town is constantly used in case of a sudden gale by the numerous sponge fishermen who work the Cretan waters on their way to and from the Libyan coast.

However much soil may have covered the rocky slopes of the island in Minoan times, in the 3,500 or more years which have passed since the destruction of the town the work of denudation has progressed to such an extent that the greater part of Pseira presents a bare and inhospitable surface. Except for an occasional herd of goats which are left there to feed during the winter months the island is absolutely deserted, and our arrival with eighty men is probably the largest invasion of its solitudes that has taken place since Roman times.

The water supply of the island seems to have been scanty. In the town itself no traces of wells or cisterns have as yet been found, a fact which would lead one to suppose that the townspeople were supplied by springs which have ceased to flow. A tradition exists among the country people on the opposite coast that there was once fresh water on Pseira, but in the present day the only supply is that held in a large cavity of natural rock close to the Roman ruins on the topmost ridge. This cavity is lined with Roman cement, but it must have furnished a precarious and inconvenient water supply, for in summer it would have been dry, and it lay at some distance from the town site. A single well, dating from the Roman or even an earlier period, has been found, sunk in the sand beach of a cove, a little to the north of the town site. It has walls of roughly dressed stones very like the Minoan house walls, and the water level is reached by a flight of eight steps formed of flat slabs. Owing to the general subsidence which is apparent on all this part of the coast, the sea has encroached so near to the well that the water is now brackish. Possibly this is the origin of the tradition about the presence of fresh water on the island. At any rate, the well must have remained open until fairly recent times. No objects have been found in the well itself, which can be assigned to pre-Roman times, but close to its mouth trial trenches have revealed parts of several Minoan houses of various periods and above them Roman remains showing that this cove was occupied in the same manner and at the same periods as the town site itself.

On the north side of the island the land is level but absolutely destitute of soil, and, as far as can be discovered, bears no traces of early occupation. On several parts of the south and east slopes sherds of Greek pottery, one of the late red-figured style, have been picked up, but so far no remains of a Greek building have come to light, although a thorough examination of the Roman buildings on the ridge and on the point may reveal the existence of Greek remains under their foundations.

A cemetery has been located on the southeast face of the island about half a mile from the town. Thirty-three graves have been opened, but the results are reserved for discussion in another place.

## THE TOWN SITE.

The town of Pseira closely resembles the neighboring town excavated at Gournia, as will be seen by the plan (Plate I), but lies more picturesquely, a huddle of streets and houses along the top and sides of a rocky point with long flights of steps descending at irregular intervals to the water's edge. The small harbor lies on the south side of this point and here must have been the old landing place; from the head of this cove two main roads ascend, one on the left to the Late Minoan I houses on the south hill and the other on the right in a long stepway to the top of the rocky point which was the center of the town in all periods (Plate IV). Just below the summit of the hill this stepway branches into four, perhaps five, roads which traverse all parts of the flat hilltop. These roads along the level are never paved, but possess a more or less even floor of natural rock, whereas all the side alleys leading down to the sea have paved stepways, which are well preserved to-day.

The masonry is all of heavy, sometimes roughly squared blocks of stone, very strongly built in the style usually associated with the Late Minoan I period, but underlying these are many walls of the Middle Minoan I era. These walls are usually of lighter, smaller stones than those used in the upper stratum, although there is little or no means of separating the two periods by their wall construction.<sup>1</sup> There is no use of ashlar masonry on any part of the site and no house that can be compared to the Palace at Gournia, although three of the larger houses described below seem to have been those of important citizens. Unlike the corresponding settlements at Gournia and Vasiliki, bricks seem not to have been used in house construction, and the upper walls as well as many of the floors are entirely of stone. This fact may be the result of the difficulty in transporting bricks, which would necessarily have been brought from the mainland, but is also due, at least in part, to the abundance of excellent building material ready at hand and requiring but little labor. The island is composed in part of a hard gray limestone, stratified in many places close to the site, in thin layers with softer stone between, so that it can easily be broken off to form excellent building material for the walls of upper stories. For floors a soft slaty stone is used, which covers the hillside at the back of the town and splits into large slabs. In almost every house the upper floor is made of these slabs, which are always found blocking the basement rooms. In some cases, noticeably in the big house of H 12, Room 5 (see Plate I), these floors were still in their approximate positions, as apparently the basements had filled with rubbish before the

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<sup>1</sup>Cf. the Early Minoan II and Middle Minoan I houses at Vasiliki, where the heavy outer walls and large bricks generally characteristic of the Late Minoan I period were used.

supporting beams of wood had rotted away, so that the upper floors, level with the thresholds of its rooms, were still clearly visible. Unfortunately the walls of this house, owing to the weight of the massive superstructure, were so thrown out of the perpendicular that all the upper courses had to be removed before the rooms could be cleared.

This universal use of stone accounts for the fragmentary condition of the pottery, of which unbroken specimens were very rare, as the falling in of stone floors and walls caused great destruction to everything except the heavier and coarser objects. The roads, in many places where the walls had fallen outwards, were blocked with masses of stones, the removal of which was the most serious difficulty encountered on the site. The earth, on the other hand, was easily disposed of, as from almost every house the dumping was over the cliffs into the sea below, and thus in two months we were able to clear the unusually large number of rooms shown on the plan.

In the trial dig of 1906 it was seen that Pseira was already a settlement of importance in the Middle Minoan I period; the later excavations have shown that the site was occupied as early as the Early Minoan II epoch. Owing to the uneven surface of the rock on which the earlier foundations were laid many relics of the first houses remained in the subsequent rebuildings of the Middle Minoan III and Late Minoan I periods, for in these rebuildings the walls were not always placed upon a rock foundation, but, where the surface of the natural rock was uneven, the fragments of earlier habitations were left in holes and crevices. The Early Minoan III and Middle Minoan I levels were everywhere closely connected, and in places it was hard to distinguish them. In fact, it would appear that no destruction and general rebuilding took place in these two periods and that one merged gradually into the other with no distinct line of demarcation.

Under the floors of Late Minoan I and Middle Minoan III houses there was in many cases a deposit of Middle Minoan I sherds associated with house walls, and, in these same houses, directly underlying the Middle Minoan I deposits, sometimes mixed with them, were fragments of Early Minoan III vases. From this it would appear that the people of the Middle Minoan I period still used the houses of the preceding period, but usually formed a new floor at a slightly higher level. This close connection between these early periods confirms the belief that they extended over no great space of years; in the Early Minoan II period one already finds the beginnings of a light on dark style of pottery, which is the prevailing Early Minoan III ware and the forerunner of the polychrome vases of the Middle Minoan I period.

The exact extent of the town in the Middle Minoan I era is doubtful, but that it was confined to the point and did not cover its entire area seems probable, as no sherds of the early periods have been found on the south hill or on the north side of the point except at one place in K 11, where a few sherds

and a hoard of obsidian flakes and cores indicated the site of an Early Minoan II or possibly an Early Minoan I building. The place was destroyed in the Middle Minoan I period and not rebuilt until the Middle Minoan III period, when the era of its greatest prosperity began, an era which was continued without interruption until the town was overtaken by the same general catastrophe which destroyed all the settlements in this part of Crete. Unlike Gournia and Palaiokastros, it never recovered from this blow, and after the end of the Late Minoan I period was apparently deserted.

Although the stratification of the earlier periods is interesting, as it confirms the conclusions drawn from other sites, it is to the Late Minoan I period that we must turn for the bulk of the finds and the best preserved houses. On all sites the period of destruction is the one which leaves the richest harvest for the excavator. As long as a site is in continuous occupation the earlier deposits are only the refuse of breakage and objects which have ceased to be of service to their owners. They are thrown into rubbish heaps and used as artificial fillings to make even floors over naturally uneven surfaces. Where, as at Psira, the town was destroyed in the height of its prosperity with no extensive later settlements to disturb its ruins the finds are of course unusually rich. If the town had come to an end with its first destruction in the Middle Minoan I era the same would have been the case with the remains of that period, but, as we have seen, the rebuilding which took place in the Middle Minoan III and Late Minoan I periods destroyed nearly all that remained of the earlier houses. From the end of the Late Minoan I era, however, to which period must be assigned the final catastrophe, no settlers appeared on the site until Roman times, and even then in very small numbers. Their houses occupied a space some 20 by 30 metres square on the top of the point, and probably destroyed only two or three houses of the earlier period.

The Late Minoan I town had increased considerably in size and the overcrowding of the point caused the formation of a new quarter on the hill to the south of the cove, nearly doubling the original area of habitation. The streets, long stepways and heavy well built house walls belong to this period of expansion which came to an untimely end in one of the first upheavals that eventually involved the overthrow of the Cretan maritime supremacy in the Aegean. This uneasy period of invasions and wars of which these destructions of East Cretan towns are the precursors eventually brought about the sack of Knossos, the capital city, and thus dealt a death blow to the Minoan kingdom as a united whole. It is not yet clear whether this was caused by internal wars or by the pressure of the wild tribes of the north, but the fact that these small islands were not resettled shows that the loss of maritime power rendered them unsafe and open to attack by sea. While Crete

still held the control of the Aegean a small island like Pseira was safe enough, and that such a settlement could attain the prosperity shown by the masses of stone vases, the big painted jars (Pl. VII) and the plaster relief (Pl. V) proves that the people of the Late Minoan I period lived in a state of peace and security utterly unprepared to withstand an armed foe. Once the blow had fallen and the sea power was overthrown a small island was too precarious a place for a town, and the survivors of the catastrophe took refuge in some of the neighboring coast settlements which partially recovered their prosperity. On the mainland in case of attack the people could seek refuge in the hills, but on Pseira their only means of flight was by sea, and even this was impossible without long warning of the enemy's approach.

The painted plaster relief and the big painted jars of the "Palace Style" show not only a prosperous community, but one enjoying close communication with Knossos. Moreover, it is important to note that Knossian products are found in contexts which would otherwise have been thought earlier; in other words, Late Minoan II Palace style vases are found in Late Minoan I deposits. Now it is certain that Pseira was never occupied in the Late Minoan II period; accordingly these vases must have been made where the Palace style had already attained a foothold. This would naturally have been Knossos, where this ware first appeared at the end of the Late Minoan I period and soon attained great popularity. Thus while the towns in the east of Crete were still making ware of the Late Minoan I style, stray vases of this later technique had already begun to find their way from Knossos to these remote settlements. No doubt had the destruction occurred a few years later or had there been an immediate resettlement of the town, the Palace style would have been found the prevailing ware as at Palaio-kastro, where such a resettlement actually took place and where the Late Minoan II Palace style can be said to represent a distinct period. On the isthmus, however, the disaster was of too overwhelming a nature to allow an immediate revival, and even at Gournia there was no Late Minoan II period, the rebuilding of the west slope taking place in the Late Minoan III epoch, after the Palace style had degenerated into a highly conventional form. The few Palace style vases from Gournia are, as at Pseira, either foreign to the site or at most an attempt by the local potter to copy designs that he had seen elsewhere. In speaking, then, of the Late Minoan I period at Pseira we must consider that it probably overlaps the Late Minoan II period of Knossos and that the Late Minoan I pottery persisted for a longer time on these small sites than it did at the artistic headquarters of the kingdom, where the new styles must naturally have originated.

## THE HOUSES.

Turning to the left from the head of the main stepway in H 8 (see plan), we reach the house in I 5, which is of peculiar interest, as it reproduces on a small scale many of the features of Knossian architecture.

Crossing the threshold, a narrow passage (1) leads into an open space (3). From here one enters a small megaron (2) through a triple doorway supported on two stone bases with the dowel holes for fastening the wooden door posts. In one corner of this megaron is a small rectangular construction divided from the main room by a low partition of upright slabs of greenish schist. A round outlet hole in the paved floor which shows traces of a plaster coating makes it probable that we have here a small bath. As the swallow hole is so large that it was hardly meant to be plugged, the bath was probably never filled, but contained an earthenware vessel from which the water could be poured over the bather. Between this bath and the south wall of the megaron a double door with a stone base for the central post leads into a passage also connecting with the main entrance of the house. Behind the bath a small stone stair leads toward an upper floor which must have contained the principal living rooms. This house is one of the latest additions to the town just before its destruction and belongs to the period when the Palace style of pottery of Knossos was just reaching Eastern Crete, as is shown by fragments of a small jug of this class of imported ware.

Farther along the unexcavated road on which lies the house just described is found another house in J 3. It lies on the summit of the knoll, with rooms terraced down the hill on both sides. It is of the usual type, but peculiar, inasmuch as it overlies a more ancient building, three rooms of which, 1, 2 and 3, were filled with masses of round beach pebbles. This deposit was about 50 centimeters deep and must have been much greater originally, as in building the later house the upper layers had been cut away. The workmen at once recognized these pebbles as sling stones, and it is probable that this was really their use and that the building was a kind of primitive arsenal.<sup>1</sup>

Turning down the small alley behind the house with the bath we reach another narrow stepway which leads down to a lower roadway running along the side of the ravine north and south. In G 5 this road crossed the torrent bed to the south hill, where a large part of it has been carried away. All the houses in G. H. 3-7 open on this roadway, and among them one is

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<sup>1</sup> I am indebted to Dr. Georg Karo for calling my attention to the fact that Mr. Tsountas in his excavations in the Cyclades found round towers filled with similar pebbles which he also considers sling stones (Tsountas, *Εφ. 'Αρχ.* 1899, p. 120). That such weapons were used is shown in the siege scene on the silver vase-fragment from Mycenae (Tsountas and Manatt, *The Mycenaean Age*, p. 213).

especially noticeable for its massive outer walls and huge threshold. In this house, H 4, there were only two narrow basements on the road level (1, 2). Their back walls were formed by a ledge of natural rock, which with the heavy street wall supported the rooms of the upper floor. To these a stone stair ascended from the paved entrance hall, but as the soil at this point was very shallow little could be learned as to size or plan of these upper rooms except that they could also be reached from the back, where a second entrance connected them with the narrow stepway mentioned above.

The only objects found lay in the basements 1 and 2, into which they had fallen when the upper floors gave way. A jar from this hoard shown in Fig. 13, is a good specimen of the local Late Minoan I ware in Eastern Crete. Jars of this sort were very common at Pseira, and several were also found at Gournia. The work as a rule is coarse and the execution of the design careless. White paint for details and added red bands are very noticeable on jars of this class, which, though far from beautiful, hold the eye by their bold design.

The most remarkable features of the domestic architecture of the houses on Pseira are the interior staircases of stone, found in almost every house and best shown in these houses along the south slope. The steepness of the hill and the fact that the light walls of the smaller houses were not strong enough to support a heavy superstructure caused each house to be built in terraces connected by stone stairs leading from one tier of rooms to those on the higher level. Thus a single house would contain a number of floors yet never stand more than two stories high at any one point. Such houses are well shown in the siege scene on the silver vase-fragment from Mycenae; in fact, they can be found to-day in Cretan hill villages which closely resemble in construction their predecessors of Minoan times. In some cases, where the outer walls are built of unusually heavy stones, the superstructure may have been higher, but the general type was a large house climbing the hillside with not more than one floor of living rooms over the basements of each tier.

Returning once more to the head of the main stepway in H 8, which, oddly enough, has no house opening into it from top to bottom, we find the first road on the right leading into the middle of a large building with no distinct threshold or entrance hall. The rooms of this house, which I have called House A, are all of large size, and the presence of a column base in R. 5, very heavy buttresses and thick walls show it possessed important upper floors which opened on another roadway in H 10 at a higher level.

The south part of this house which lies on the edge of the cliff has been broken away, so that its exact extent cannot be determined; moreover, the shallow soil of the upper tier has obliterated all traces of the rooms in that direction. Scattered along the lower road and evidently dropped by plunderers lay five stone vases which speak for the original contents of the house. In quality



of stone and finish they are excelled by no other finds of the season, and although little else was found in the house, they show that it must have belonged to a wealthy citizen (Fig. 15 *l m*). This house is rivaled in point of size by only one other (House B in H 12), and both of them are much larger than any of the houses at Gournia excepting, of course, the small palace at that site. This may be explained by saying that Gournia was the seat of the local governor of this part of the ancient Minoan kingdom, although the small town of Pseira was the more prosperous of the two. Gournia would certainly have been the more suitable residence for the local official, as it lay on the mainland in what was a populous district in Minoan times, if we may judge from the many remains of that period in the immediate neighborhood.

The second road on the right from the head of the main stepway has not been entirely cleared, but it is plain that just before reaching the entrance of the above mentioned house a branch leads east from it while the main part descends at a slight angle to H 11, where it turns sharply down the hill in a broad stepway paved with massive slabs. At the top of this stepway to the east a very large threshold leads into House B, the largest cleared thus far on the island. Like House A, this appears to have been merely the house of a wealthy citizen, and in plan and construction differs in no way from its humbler neighbors. Its large size and important upper floors required massive walls of large stones, which in some places were preserved to a height of three metres. Like the smaller houses, this also climbed the hill in tiers, of which we can count four reaching from the water's edge to the summit of the point.

The outer wall facing the road is built of roughly squared blocks of stone approaching ashlar masonry. From the threshold one enters a paved ante-room or entrance hall (2), and this connects in turn with the rooms lying over the deep basements of the second tier (5, 7). From the north side of this entrance hall a narrow stone stair ascends to the third tier of rooms, in only one of which (4) were any objects found. From room No. 3 of this tier another stair leads to the rooms of the fourth and last tier lying on the actual hilltop, but the soil at this point was so shallow and had been so disturbed in Roman times that no trace of their plan remains. The first tier, close to the water's edge, was also very much destroyed, and its walls were so thrown out of perpendicular by the weight of earth above that the few that remained collapsed as soon as cleared. Like the entrance hall, the rooms on the same level with it over the basements of the second tier were all paved with large slabs, some nearly a metre square. In Room 5 this paved floor was still in its approximate position, the basement having filled with debris before the supports of the upper floor had given way.

From various parts of this house came the best finds of the season, chiefly

of vases and stone lamps, but, judging from the fragments scattered about the rooms, they represented but a small part of its original contents. The road outside the main entrance was filled with hundreds of fragments of fine painted cups and vases, which seemed to have been thrown out at the time the place was sacked. This sack must have been carried out thoroughly, as no metal or any small portable objects were left behind. The pottery seemed to have been wantonly destroyed; parts of the same vase were found scattered through various rooms of the house as though they had been broken and then kicked about the floors. Parts of the stone lamp (Fig. 19) were found in Rooms 4, 5 and 7, while the bottle in Fig. 8 came from Rooms 7, 8 and 9.

On the north side of the hilltop in J, K, 11-15, were a number of rooms which belonged to a row of houses standing along the edge of the cliffs. The easternmost of these houses are not clearly distinguishable one from another owing to Roman foundation walls which were sunk into their deposits and also to the fact that the greater part of each house, because of the corrosion of the cliffs, has slipped into the sea.

In J 13 we find the probable continuation of one of the roads starting east from the head of the main stepway so often referred to. Immediately on the left of this road lie the walls of a small but well built house, J, K, 12. The main entrance leading into R. 4 is reached from a small alley which turns off the main road on the left. Room 4 lay on the upper floor over a low basement, and owing to the sharp slope of the ground at this point is on the same level as the ground floor room or court marked No. 1, which lies higher up the hillside. Room 1 seems to have been a small paved court with a sort of portico across the north side which led to the rooms entered from the street 2 and 4. In the narrow portico, evidently fallen from an upper floor, were parts of a plaster relief representing a Minoan queen or goddess in a richly embroidered dress. Because of the shallow soil at this point the surviving fragments were very rotten, and only those in fullest relief had withstood the action of time. These include one breast, arms and part of the skirt, which are shown in Pl. V, where a conjectural restoration of the bust has been attempted. Aside from this relief the house was a singularly empty one, probably because it was more carefully plundered than its neighbors. The few potsherds found all belong to the Late Minoan I period, which lingered on here after the Late Minoan II Palace style, with its great frescoes and reliefs, had already commenced at Knossos.

Further along the ridge in I, 14, 15 another large house (D) has been partially cleared. In size it rivals the two neighboring houses already described, and, judging from the objects found, was an equally rich one. The heavy walls and massive buttresses again indicate important upper floors. One of the basements, 2, was lighted by a window and used as a storeroom. Both

2 and 5 have paved floors and connect with the rooms behind by a doorway. In 5 nine large jars were found standing in a row along the south wall of the room on each side of the doorway. All except two were painted with bands of poor dark paint, but these two belong to a very different class. One is shown in Fig. 9 and the other is quite like it except for a difference in the rim. It is hard to explain the presence of such jars in a narrow dark store-room, where the plain unpainted jar would have fulfilled the same purpose. Possibly they were hidden there among the others on the chance that they might be overlooked by the spoilers.

Apparently these rooms, 2, 3, 5, were the result of a rebuilding of this part of the house on a more regular plan, as the very irregular range of rooms in I 15 belongs to the same building. In a corner of 1 is a curious semicircular construction of solid masonry exactly similar to one found in a room of the Palace at Gournia. At about 1.50 m. from the ground the outer circle of masonry ends, making a shelf about .30 m. broad, while the central core rises about .30 m. higher, making a second shelf or platform in the corner. From its resemblance to the fireplaces seen to-day in many of the Cretan inns, this was probably its use, although no traces of fire were found.

Of the other houses which lie still farther along the point little can be said except that they repeat the usual features of these small Minoan dwellings and contained no objects of especial interest.

In I 16 two more roads were found leading up towards the summit of the hill, and it is clear that the houses extended to the very end of the point, which has evidently subsided to a considerable degree. Many of the houses are now drenched by spray in a heavy storm, and others still lower on the rock at the end of the point have been almost completely swept away by the action of the waves.

## THE POTTERY.

### THE EARLY MINOAN PERIOD.

#### EARLY MINOAN I.

Of the Early Minoan I period there are no traces on the point excepting a large hoard of obsidian cores and flakes associated with early potsherds in K 11, R. 1. These sherds are of coarse gritty clay, black or brown, and very highly burnished. One piece of a cover and a cup with suspension handles have a very early look, although they might equally well belong to the first part of the succeeding period.

## EARLY MINOAN II.

Almost all the rock crevices on the hill were filled with fragments of this period, both the mottled red and black and the dark on light geometric techniques being represented. Under the floor of Room 4 in House A a large deposit of this period came to light, including a perfect jug of the mottled style and a side-spouted jar of the common Vasiliki type (*Trans.*, Vol. I, Part III, Pl. XXXIV, Nos. 6 and 7), with a geometrical design in white, showing the influence of the succeeding period. The wares of this period are not essentially different from those found at Vasiliki in 1904 and 1906, and as no new shapes or styles occurred, they do not require any further description.

The stratification, where it could be recognized, carried out what had already been noted at Vasiliki and elsewhere, that the dark on light geometric ware lay immediately beneath the light on dark Early Minoan III pottery, while the mottled technique was found in both deposits, though to a far lesser degree in the latter.

## EARLY MINOAN III.

The town which occupied a small area during the preceding period now attained considerable size. The principal deposits of this ware came from rock crevices under the Late Minoan I floors in G 6 and on the summit of



Fig. 1.



Fig. 2.

the point H. 4, where the Later Minoan I walls did not reach the underlying strata owing to the depth of soil. No remains of this period have as yet been found under the Late Minoan I houses on the south hill.

Judging from the masses of sherds in some of the rock holes this period was a long one, merging gradually into the Middle Minoan I period with no distinct line of separation such as marks the end of the Middle Minoan I and Late Minoan I periods on this site. In many cases the Early Minoan III and Middle Minoan I deposits were very much confused, and a certain type of cup (Figs. 1 and 2) seemed to form a connecting link between the two and occurred

with the remains of both periods. This type did not appear in the Early Minoan III deposits of Vasiliki, where decorated cups of this shape were always without handles, but was found at Palaikastro (*B. S. A.* XI, p. 271, Fig. 5d), in Middle Minoan I deposits; moreover, several undecorated cups of this type came from the Middle Minoan I house B at Vasiliki. On the other hand, this same type occurred in several undoubtedly Early Minoan III graves in the cemetery. These cups are occasionally decorated with a festoon in red paint, thus foreshadowing the Middle Minoan I polychrome style. The appearance of this type of cup in both periods emphasizes the close connection between them uninterrupted by any overwhelming disaster.

#### THE MIDDLE MINOAN PERIOD.

##### MIDDLE MINOAN I.

The soil in I 6 was unusually deep owing to the gradual slope of the hill at this point, and it was soon evident that the Late Minoan I floors were not laid on a rock foundation. Below these floors the walls of



Fig. 3.

an earlier Middle Minoan I house were found. It was orientated like the later house, and in many cases the Late Minoan I walls were laid on the top of those of the earlier building. Unfortunately at certain points this was not the case, and the Late Minoan I builders had sunk their foundations deep into the Middle Minoan I deposits. Owing to this fact almost no objects were found entire, but that the original house would have proved a rich one was shown by the parts of nine stone vases and many more in clay. Three of the stone vases were found entire, one of which is shown in Fig. 15, and is a typical example of the low open bowl so much in vogue in this period.

The other fragmentary vases were, with one exception, parts of similar bowls of various sizes, the exception being a cup in fine gray veined limestone with a trefoil spout. More important is the jug shown in Fig. 3. Its uptilted spout recalls some of the Early Minoan III shapes and the white design on a dark ground shows the simple beginnings of a curvilinear style but little removed from the methods of Early Minoan III decoration.

Together with this jug were several large jars and covers representing the Middle Minoan I dark on light style, which was commonly used for all the larger, coarser vessels. This ware, three examples of which are shown in Fig. 4, is always characterized by its buff clay and bold designs in slightly lustrous dark paint. The clay in the larger vessels is generally coarse, but in the small vases the designs are painted on a smooth buff slip which sometimes shows signs of polishing. The favorite designs are parallel sets of oblique lines running from the neck to the base of the vase, large scrolls like a running spiral pattern with the spirals filled in, and rectilinear designs

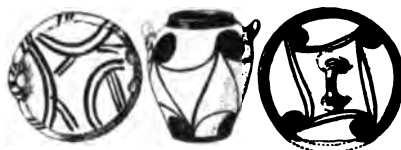


Fig. 4.

like those on the vases of this class found at Vasiliki (*Trans.*, II, 2, p. 128, Figs. 11 and 12).

Some of the smaller vases with the polished buff slip and geometrical dark on light designs closely resemble the ware in use at the beginning of the Early Minoan II period, when the mottled technique is still in its earliest stages. The cups shown in Plate VI *a* and *b* came from H. 3, R. 3, and belong to this class except that here we have an added white paint, so combining both the dark on light and light on dark styles. The thinness and fine quality of the clay is very unusual in the dark on light wares of this period and shows that this style of decoration was sometimes used for vases of the better class. The other vessels from this deposit included a number of black glaze cups with festoons of white paint on the rim like those which characterized House B. at Vasiliki and which have also been found at Palaiokastro in the same context; also a small black glaze cup with a white fish, a design common in this period. (*Trans.*, Vol. I, Part III, p. 189, Fig. 6, II<sup>e</sup>.) (*Id.*, II, 2, Pl. XXX *b*.)

Under the Late Minoan I floor in G. 7, R. 2, was found the curious vase shown in Fig. 5. As the deposit was characterized by masses of

Middle Minoan I cup fragments, there can be no doubt but that this vase belonged to the same period. The exaggerated shape and the large size of the vessel show that the Middle Minoan I era was by no means a primitive period and that no great transition was required to produce the exquisite polychrome pottery of Knossos with their curious shapes. In the case of this vase the shape was the principal consideration, and to emphasize it no decoration which could distract the eye was employed, half the body being painted with chalky white, the other half black. That the shape was derived from a metal prototype is shown by the clay rivet on the vertical handle, and though a metal vase of this shape may have had an especial use, its copy in clay was hardly practical but merely an example of the potter's skill.

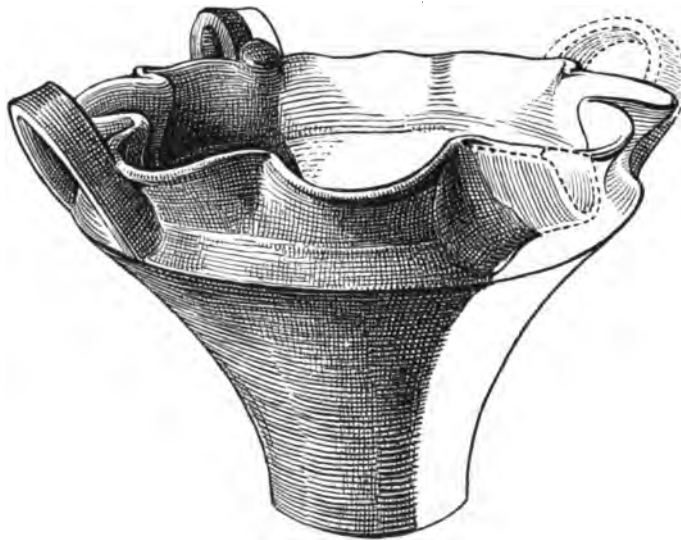


Fig. 5.

#### MIDDLE MINOAN III.

That the resettlement of the island took place near the end of the Middle Minoan period seems clear from extensive rubbish heaps found among the Late Minoan I houses of a kind of ware which immediately precedes the typical Late Minoan I style of pottery. This ware is of very fine quality and in it we see that the dark on light designs of the succeeding period already predominate over the old Middle Minoan I light on dark style. The light on dark technique is in a decided minority and consists usually of a monochrome white design on a dark ground. The dark on light style is confined almost entirely to variations of the ripple motive, with no sign of the naturalistic plant designs

so much in vogue in the Middle Minoan III and Late Minoan I periods. The vases are usually hole-mouthed jugs and low open bowls, the latter of which commonly have the ripple both inside and out, also a similar style made of broad wavy brush marks. White paint is sometimes used for details on broad dark bands, but there is no trace of the Late Minoan I red. This style of pottery may be said to occupy an intermediate stage between the true Middle Minoan III ware of Knossos and the typical Late Minoan I fabrics, and cannot truly be said to belong to either class. As true Middle Minoan III pottery has not been found so far on any of the sites in this neighborhood, I have called this ware by that name to distinguish it from the later Late Minoan I wares of which it is the forerunner. The deposits of this style were all very fragmentary, no vases entire and none that could be made up from fragments. The evidence shows that it was a period of resettlement and merged into the Late Minoan I period very shortly afterwards, when the town was entirely rebuilt.

#### THE LATE MINOAN PERIOD.

##### LATE MINOAN I.

The Late Minoan I local pottery of Pseira presents much the same characteristics as that of Gournia, which is to say the prevailing designs are drawn from plant life or from marine objects. The ripple design, which, as I have said, attained such great popularity in the Middle Minoan III period, did not easily die out, and on some of the best Late Minoan I vases we find it occurring combined with designs typical of that period (Fig. 6). The use of white paint for details begins at the end of the Middle Minoan III period and later a chalky red is introduced for the same purpose. The monochrome light on dark Middle Minoan III style persists in many black glaze cups with a design in white around the rim. Of these cups the commonest type is straight sided with a slightly flaring rim encircled by a band of very stiff and regular white spirals.<sup>1</sup>

For the Middle Minoan III ripple vases a very fine buff slip had been revived, which recalls the polished buff slips of Early Minoan II and Middle Minoan I vases, except that the new slip possessed a harder surface and presented a more brilliant appearance. The use of the slip increased to such an extent in the Late Minoan I period that it is unusual to find a decorated vase without it. The paint used is in itself very lustrous and when combined with the polished slip gives to the surface of the Late Minoan I vases, where well preserved, a finish unequalled by the ware of any of

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<sup>1</sup> Cf. *Gourniá*, Plate VI, Fig. 35.



the preceding periods. On all large jars which are of coarse gritty clay this slip was valuable to give a smooth surface for the painted design, although it was not universally used, for a thin buff wash was sometimes substituted. The jars with this buff wash are always of an inferior sort, decorated with either plain bands or coarse plant designs in very lustrous paint.

Another type is occasionally found which recalls the Middle Minoan I period and in a lesser degree the polished dark subneolithic ware of Early



Fig. 6.

**Minoan II.** These are cups and jugs of dark gray clay of fine quality covered with a shiny black varnish which peels away from the surface very easily. This is an archaistic revival of an older style and is sometimes noticed in Middle Minoan I vases, although it does not appear to have ever become popular, judging from the few examples found. Small jars were very frequently found with crude flowers, usually a lily, incised when the clay was still moist in place of a painted design.

Another archaism is found on several clay bulls from the town, which are covered with a chalky white slip, over which is painted a harness in either

an orange red or purple (Fig. 7). This technique occurs occasionally in the Middle Minoan I period, but in the Late Minoan I period was probably confined to these bulls; at least I do not know of its use on any vase of the period. That a white bull was the favorite sacrificial victim seems clear, and the custom that the votive-offering should also be white necessitated the use of this otherwise uncommon white slip.

One of the most curious facts about the finds of this period was the widely scattered condition of broken objects. In many cases broken vases and stone

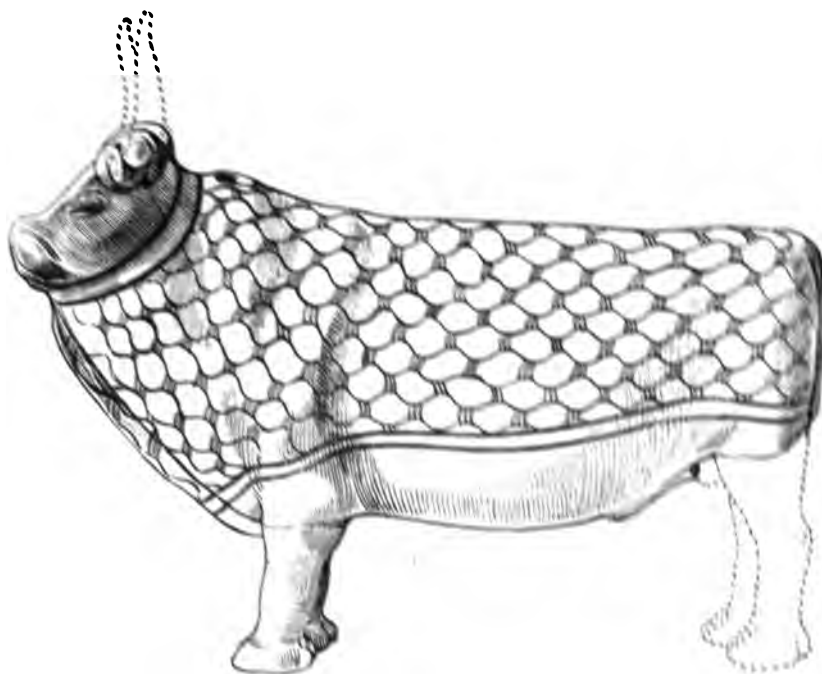


Fig. 7.

vessels were found piece by piece in various rooms of the same house and sometimes scattered over even a larger area. One small lamp (Fig. 18) was found in H. 12, R. 8, early in the season, and on the last day its handle turned up in I. 14, R. 5. When we remember that the upper walls of most of the houses were of stone as well as their floors, this is not so surprising, as the destruction probably left many houses standing in a partly ruined condition and accessible to any wanderers who might return to the site. Thus in many cases parts of a vase may have been picked up, carried a little distance and dropped again if something else was found of greater value. Clay vases, as we have said, must have been knocked off from shelves when the house was sacked and their fragments scattered about the

rooms as too bulky and worthless a form of plunder. The sack, combined with the falling in of so many stone walls and floors, left very few vases entire, although the large jars, which were heavy and not easily overturned, were unusually complete.

As is always the case on these town sites, many houses were entirely empty, and the finds of clay vases came from certain large deposits which by some chance escaped utter destruction. Dealing with these deposits first, there are in all fifteen vases, for the most part cups and bowls, which come from D. 5, R. 1, a new house of which only part of one room has been opened up. This room was filled with thousands of finely decorated Late Minoan I sherds, from which the above mentioned vases were put together. Twelve baskets of painted potsherds and as many again of coarser vessels represent the breakage of an enormous mass of pottery which must have formed the stock of a dealer. These vases, though good examples of their class, present no new features, the designs being for the most part plant wreaths and similar motives.

The next deposit in House A. would seem to have fallen into a basement room under the entrance hall, where we find the threshold opening off the upper road—H. 10, R. 1. The two best vases from this deposit are shown in Fig. 6 and Pl. VI c. One, the tall amphora (Fig. 6) with the ripple and plant motives, is a shape more characteristic of the preceding than of the Late Minoan I period, but the designs and the use of white paint for the details show it must be classed early in this period. The other vase (Pl. VI c) is a very good example of the Late Minoan I style at its best. The influence of the Middle Minoan light on dark technique is still very strong, as shown by the ivy pattern in white on the central band, while the ivy leaves with spiral volutes are very typical of the period to which the vase belongs. A clay bull similar to the one in Fig. 7 was found with the vases and is painted in a way already described, with an orange harness over the white body slip. Three such bulls were found entire or nearly so, also parts of three others. All but one of these bulls appear to have been made from the same mould, probably turned out by the local potter for votive-offerings, or, as Mr. Dawkins suggests (*B. S. A.*, Vol. XI, p. 287), as a cheap substitute for sacrifice used by the townspeople in their religious ceremonies. It seems probable that each household had its own little shrine, for Gournia is the only place where a town shrine has been discovered. In the poorer houses these shrines must have been of the simplest type with accessory cult objects of a perishable character, but in houses of the better class on several sites what appear to have been the remains of domestic shrines have been found (*B. S. A.*, Vol. X, p. 216).<sup>2</sup> In House B. R. 4 parts of a

<sup>2</sup>At Palaikastro there seems to have been a Minoan shrine on the site of the later temple of Dictæan Zeus which may be a town shrine such as the one at Gournia (*B. S. A.*, Vol. XI, p. 287).

large clay bull's head were found and nearby a narrow ledge of small beach pebbles which may have served such a use, as the late shrine in the palace of



Fig. 8.

Knossos shows that such beach pebbles were employed for altars. Near this ledge was found a triton shell cut out inside to form a vessel, and this again

recalls a Knossian shrine, for in the Middle Minoan III shrine of the Snake Goddess shells were associated with cult objects. At Pseira a number of such shells have been found, in different houses, usually cut out inside in the way just described, and evidence points to the fact that shells of all sorts were associated in some way with Minoan ritual.

To return to the pottery once more, some of the best finds of the year were made in House B. and in every case had fallen into the deep basements from the rooms of the upper floors. The flask or filler of Fig. 8 comes from this house and is one of the class of vessels showing strong influences of the Late Minoan II Palace style. The motive is evidently that of the date palm, and although the stiff architectural style of the full Palace period is lacking, it needs only a step, and an easy one at that, to produce the splendid Palace style jars of Knossos with the lotus and papyrus designs. The design on the neck is quite unlike the true Late Minoan I style; moreover, this shape of bottle filler seems not to have made its appearance until the end of the Late Minoan I period, when it attains popularity almost to the exclusion of the conical straight sided filler. This straight sided shape survives in the Late Minoan III period after the bottle style has disappeared with the end of the Late Minoan II pottery.

The only other vase from this house (R. 1) which is in any way remarkable is the large jar shown in Plate VII, which is, without doubt, one of the finest examples of the Late Minoan I period that has been found thus far in Crete. The profuse use of white paint for the details, the presence of chalky red band on the rim prove that it belongs to the Late Minoan I style at the last stage of its development. The design of bulls' heads and double axes is itself conventionally treated, but such designs in which sacred emblems play an important part do not lend themselves easily to naturalistic treatment. It is in the olive sprays that fill the spaces between the stiff heads that we see the love of naturalism which characterizes the artist of this period, and in this case they help to lighten the heaviness of the whole design. The lower zones of decoration are splendid examples of the various types of spirals, ivy leaves and plant rosettes with which the Late Minoan I potters loved to cover their vases, and which one meets again and again on every class of ware from the end of the Middle Minoan III to the beginning of the Late Minoan II period. From the profuse use of the double axe motive it is probable that this jar was reserved for some ritual use. The double axe appears on the top and sides of the rim, on the shoulder between the horns and heads of the bulls, and on the base, and even the handles take their form from the same cult object. The large axes on the shoulder bear on their blades the same designs worked in white paint that occur so often on the axes figured on seal stones and in scenes of ritual worship, and must be taken to represent the actual

manner in which the original objects themselves were decorated. It is possible that these details in white may stand for the exact reproductions in a paint medium of metal axes inlaid with silver wire, an art not unknown to the Minoan goldsmiths. The rim is very deeply undercut and pierced with a row of small holes through which a coarse needle could be passed to sew on cloth covering over the top of the jar, so as to exclude all dust from defiling the contents. It may be that the jar was used for holding oil or some other liquid sacred to the gods, in which case this cover would keep the contents pure, whereas an earthenware cover would never fit closely enough to exclude dust from sifting in. The splendid results obtained by the Late Minoan I polished slip are well shown here where the rather coarse clay is covered by a heavy coat of finer clay so polished that no sign is visible of the rough material of which the vase is formed. The bulls' heads are painted in dark glaze with harness of white, which rather contradicts the theory that the bull most acceptable to the divinities should be white, but in this case a white head on the light buff slip would have been nearly invisible, and a light design on a light ground would, as far as we know, have been contrary to all Minoan traditions of vase painting. The white harness is also a divergence from the usual harness of orange red, but it seems that here the exigencies of the case obliged the artist to adopt new methods more suitable to his background on which his designs must of necessity be in dark glaze. With this vase we reach the highest stage of development in Late Minoan I ceramic art, which in point of paint, glaze and slip is unsurpassed by either earlier or later wares in Minoan Crete.

The bull's head before mentioned came also from this house, but, unfortunately, the greater part of it is missing. This head is rather larger than those from other sites and has the greater part of one of the horns intact, which, as a rule, are lacking on the other heads. Like the clay bulls from other parts of the site, it is covered with a chalky white slip. The closed neck shows that it was never attached to a body.

The next vase deposit to be described was found in House D, in the two basement rooms 2 and 5. In R. 5, among a number of small pithoi, was found the jar of Fig. 9. Another larger one, an exact duplicate except for the rim, was found with it, and seemed to have been filled with some very fine plaster. These two jars were standing, as stated above, p. 14, together with seven coarser ones of a very inferior quality. Their original use must have been a purely decorative one, as their very slender base and heavy rim render them a very unsafe receptacle for any material.

The most curious feature of the jar in Fig. 9 is the moulded rim. Dr. Mackenzie tells me that fragments of such rims have been found at Knossos, and I believe they have appeared at Phaistos also; but no one has had any very clear idea as to what sort of vessels they came from. The body is of

coarse clay covered with the usual polished buff slip, except around the rim, where the same chalky white already noticed on the bulls has been employed.



Fig. 9.

The whole body of the jar except for a zone near the base is covered with a network of connected spirals in dark glaze picked out with white dots. The

lower zone, separated from the rest by dark bands, is decorated with a row of loose spirals. The background is filled in with dark glaze, leaving the pattern in the natural buff of the clay, a method new to these sites on the isthmus. The



Fig. 10.

network of spirals forcibly recalls certain architectural designs, and is in all probability a potter's adaptation of designs from the walls and ceilings of the great Minoan palaces. The jar has the look of having been copied from a metal original, and one can well imagine such a metal jar with the curious rim and spiral net in repoussé, the white dots inlaid with silver.



In G. 7, R. 1, which was cleared in the three days' trial made on the site in 1906, were found a splendid set of vases, three of which are shown in Figs. 10 and 11 and 12. Like the flask of Fig. 8 they might be classed as Late Minoan II were it not for the undoubted Late Minoan I character of all the objects associated with them. The flask or bottle filler with the dolphins, Fig. 10, was found lying partly inside one of the earlier conical fillers of which Gournia furnished such fine specimens in 1903. The old Middle Minoan I design of the fish again appears here, but the treatment is now rather more realistic, as the dolphins in this case are enmeshed in a net which covers the body of the vase. The design at once recalls the large fresco of dolphins from Knossos, so that again, as in the jar of Fig. 9, we find the potters copying designs from the walls of the Cretan palaces—in this case not so well adapted to their humble craft.



Fig. 11.

The jar in Fig. 11 looks as though it belonged to the end of the Late Minoan II rather than to the end of the Late Minoan I period, the small barred stop-gaps between the curls of the volute being a design very common in the gold work of the last Minoan period (Evans, *Prehistoric Tombs*, p. 130, Fig. 119, No. 75a). The whole design is highly conventionalized and shows that wherever these vases were made the Palace style was already at an advanced stage of its development.

That these vases also represent a style foreign to the small Minoan towns on the Isthmus of Hierapetra is quite clear, as the clay, technique and whole

appearance of the vessels are utterly different from those of the local fabrics. The Zakro filler (*J. H. S.*, XXII, p. 333, and Plate XII), the set of fillers from Palaikastro (*B. S. A.*, Vol. IX, p. 311, Figs. 9 and 10), all belong to this class; similar also though of slightly earlier date is the fine octopus "bügelkanne," from Gournia (*Gournia*, Pl. H). At Melos also fragments of vases of this class came to light, and these were also regarded as imported fabrics probably from Crete (*Phylakopi*, p. 265, and Plate XXXI, Nos. 1, 2, 3 and 5).

In regard to these fillers which certainly served in religious ceremonies, it is a curious fact that they very seldom occur singly, but always in hoards. In this room were parts of five, a cover decorated with double axes, the basket-shaped vase of Fig. 12 and one of the clay bulls, Pl. IX. At Gournia a number of fillers were found with a bull's head in clay and several vases of curious shape in a small house on the east slope. At Palaikastro the same



Fig. 12.

thing occurred, so that we may perhaps conclude that each small town possessed a supply of these vessels, which were the property of the village priest and kept in his house.

The basket-shaped vase of Fig. 12 may not be as late as it looks, owing to the character of the design, which does not admit of much freedom of

treatment. The curious shape and the abundant use of the double axe show that this vase was probably intended for ritual use.

Another vase closely related to this group from G. 7, R. 1, was found in I. 3, R. 1. It is a very good example of the use made of marine designs, the nautilus, seaweed and rockwork adapting themselves extremely well to vase decoration. The shape of this vase again betrays a metal prototype as shown by the handle where the metal rivet fastening it to the body of the vase has been reproduced in clay.

In J. 12, R. 1, there were found, as stated above, parts of a large plaster relief, evidently that of a woman, if we may judge by her richly embroidered dress and the conventional white color of the skin. The restoration shown in Pl. V combines most of the remaining parts and, except for the left arm, may be considered correct. This left arm may have belonged to another figure, although the other fragments show no signs of the existence of a second relief. The plaster was in so rotten a state that the greater part of the surface had disintegrated beyond hope of recovery; but enough remains to give a vivid idea of the rich character of the dress. The colors are blue, white



Fig. 13.

and yellow, the first two predominating. The work is very delicate and the smallest details are drawn with a care that even now must excite admiration. As is often the case in these Minoan reliefs, the skirt and bust are the parts in highest relief, while the head was not in relief at all, but painted on the flat surface, no fragment of which remains. As in the pottery, we find

in Minoan embroidery many of the designs employed in architectural decoration. The border of rosettes on the left sleeve is a design of this sort which



Fig. 14.

also occurs in the jewelry of the later periods (Evans, *Prehistoric Tombs*, p. 130, Fig. 119, No. 66a).

Unfortunately, the work on the bodice has almost disappeared, but enough is left to show that the form was of the usual décolleté type affected by Minoan ladies, which left the breasts exposed. Around her neck are two necklaces. The upper one, from its yellow color, must have been of large gold beads, with festoons of smaller beads hanging from a string of crescent shaped gold bars. The second necklace, which hangs much lower on the bosom, is blue, and no doubt is intended to represent a string of blue porcelain beads, which are often found in Minoan graves of all periods. These reliefs, in gesso duro, have always been found at Knossos associated with the remains of the later Palace, and have been classed as belonging to the Late Minoan II period. Neither at Gournia nor at Palaikastro were there any traces of such reliefs, and even the rulers of Phaistos and Hagia Triada seem to have contented themselves with fresco painting on a flat surface. That such a thing should have come to light in the ruins of a small town on a barren island is a matter of no small astonishment, and strengthens the idea that this must have been a settlement in close connection with the center of Minoan civilization.

### THE STONE VASES.

The fragmentary condition of the pottery on this site was more than made up for by the enormous numbers of stone vases and lamps from all parts of the town. In all they amounted to about eighty-five objects. Hitherto thirty or even twenty stone vases in good condition had been considered a fair output for one season, but here, for some reason, the plunderers left the entire accumulation behind them, with the result that Pseira, from the town and cemetery combined, produced the huge total of 150 stone vases and lamps, of which the majority were in an excellent state of preservation.

Any classification of these vases into distinctive periods is impossible, for, excepting the stone lamps and cup, we find that almost every type of vase found in the Late Minoan I houses has its origin as far back as the Middle Minoan I, or even an earlier period.

The fact of their durability and the labor required to make even a small vase makes it probable that they were in most cases handed down from one generation to another, and the occurrence of a stone vessel in a Late Minoan I deposit gives not the slightest clue as to the date of its manufacture. We know that Pseira, as a town, underwent complete destruction in the Middle Minoan I era, and was not occupied again until the Middle Minoan III period. Therefore, unless the returning settlers brought many stone vases with them, we might assign those found in the Late Minoan I houses to that date. But that these people arrived empty handed, with no goods or chattels, is highly improbable, so that it is best to describe the objects without assigning them

to any definite period except in the case of the larger lamps and the stone goblet. Of these lamps three are of the pedestal type, Fig. 15 *d*, and four others with equally large basins stand on only a short foot. All these are

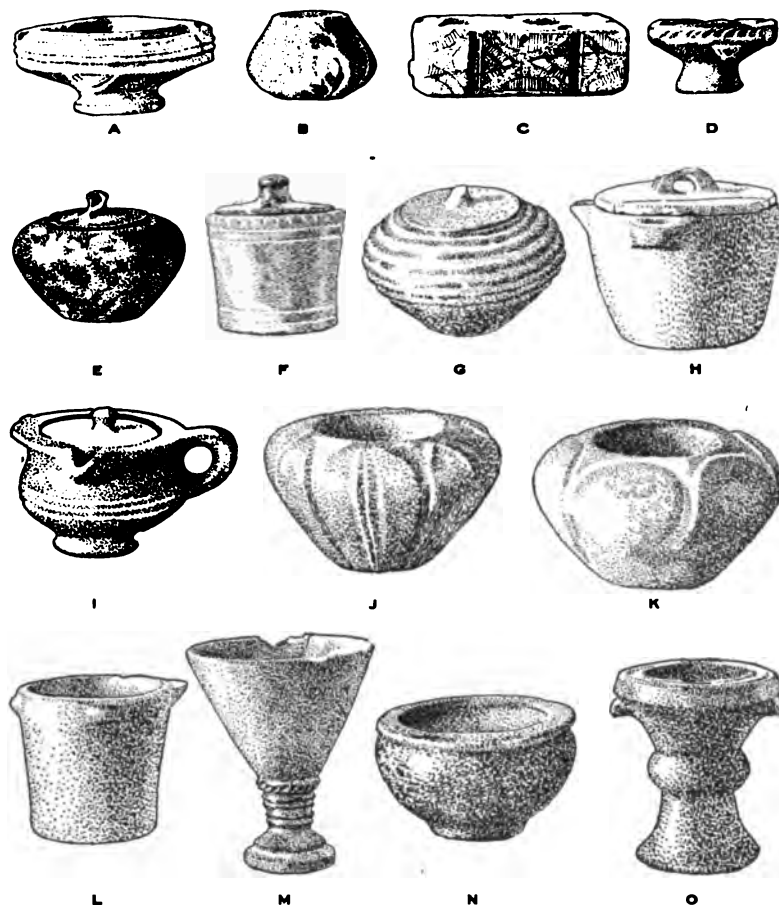


Fig. 15.

of steatite and each has cuttings for two wicks. In addition to these, which are all in a fair state of preservation, a number of pedestals were found from which the lamp basin had been broken away. Several of the lamps on a short foot had the base roughly trimmed, and it seems probable that they were all originally of the pedestal type, but, having been broken off, still continued to be used, the broken base being thrown away as valueless.

Of the small lamps nine are of black steatite, three in reddish limestone

and two in pale green steatite of fine quality. One of the red stone lamps, from House B, is shown in Fig. 17, and is a fine example of its class. The collar of drooping leaves is a design which is characteristic of Late Minoan II art.

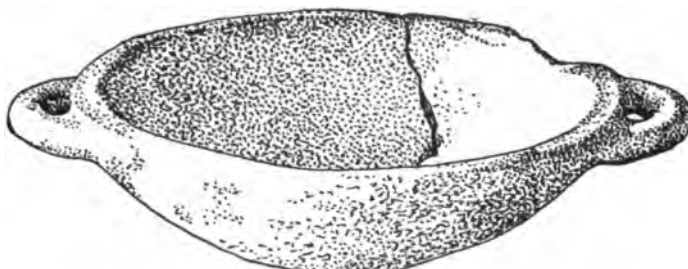


Fig. 16.

Fig. 15 gives the main types of small lamps and vases from the site. Although I know of no pedestal lamps earlier than the Middle Minoan I period, the short type of large lamp certainly occurs earlier, for in the Middle Minoan I House A at Vasiliki, five of this kind were found in 1906, but so rotted that it was impossible to preserve them. Of the smaller lamps, Fig. 15 *d* certainly belongs to the Late Minoan I period, as the collar of leaves never occurs before that date. The vase *c*, in the same figure, belongs to a class of vessels which were found in the Koumasa tombs in great numbers and should be assigned to at least the Early Minoan II period. Of the "blossom" bowls, two types, *j* and *k*, were found; of these, *j* is probably the earlier, although *k* occurs as far back as the Middle Minoan I era. With the type of *k* the period is indicated by the profile, for the earliest examples have a curving outline, while in those of the Late Minoan I class the shoulder is higher and the outline more angular. The type *i* is common in the deposits of all periods from the Middle Minoan I to the Late Minoan I period. The large bowl, Fig. 16, is a typical Middle Minoan shape and comes from a house of that date. I do not know of its ever occurring in Late Minoan I deposits, although in the Middle Minoan I houses it is the type most commonly found.

The vase shown in Fig. 15 *m*, from the road outside House A, closely resembles in shape the famous warrior cup from Hagia Triada. A hammer head in gray veined marble is a type already known by examples from Palaioikastro (*B. S. A.*, Vol. XI, p. 279), and from Hagia Triada (*Mon. Ant.*, XIV, p. 56, Fig. 26). These hammer heads could not have been intended for actual use as such, owing to the fine quality of the stone and the fact that they so seldom show signs of wear.

In Fig. 15 *h* and *l* are shown two large steatite vessels, the first from the road by House A, the other from House B, R. 9; of these the second resem-

bles a cooking pot of the present day, while the other is a shape which recalls the much earlier painted pots so common in the Early Minoan III epoch, although it is not likely to be of that date, owing to the fine quality of the



Fig. 17.

steatite. The black steatite in use in the earlier period is, as a rule, very poor in quality and quite inferior to that used for the better class of Late Minoan I stone vases.

The best of the stone vases found at Pseira is the splendid vessel shown in Plate VIII, which exactly duplicates one found at Knossos (*B. S. A.*, Vol. VI, 1899-1900, p. 30). The stone is a species of breccia of very hard quality, which occurs in large masses close to the site, possibly indicating that the vase



Fig. 18.

was made in the town. The house in which it was found, D. 5, R. 1, on the south hill, was characteristic of the Late Minoan I era, which would place this vase in that period, while those of Knossos were assigned to the Late Minoan II period. Just below the carved rim the vase is pierced on each side by two small holes, which were probably used for suspending it by means of cords when it was not in use.

In the big house B parts of three delicate cups of white marble were



found of the type of Pl. X *d*, and also two fragments of a marble plaque on which can be seen rows of ashlar masonry, evidently the walls of a large building. From the curiously irregular shape of this plaque, of which no two sides are of the same length, we conclude that it must have been part of a mosaic representing some sort of scene with buildings in the background.

The only remaining object which presents any new features is the pretty lamp of Fig. 19, which comes from House B, Rooms 4, 5 and 7. It is of the finest quality of brownish steatite and repeats the idea of the "blossom" bowls, only here the flower is open instead of partly closed, as is usually the case. The workmanship is excellent, the carving in very sharp relief, and,

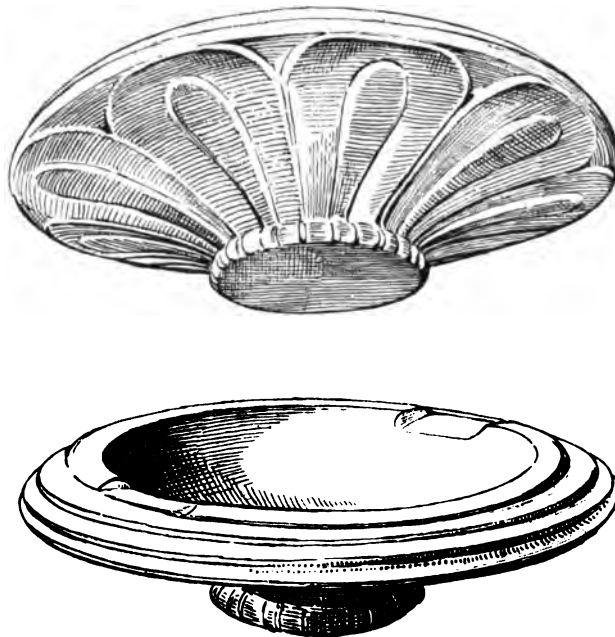


Fig. 19.

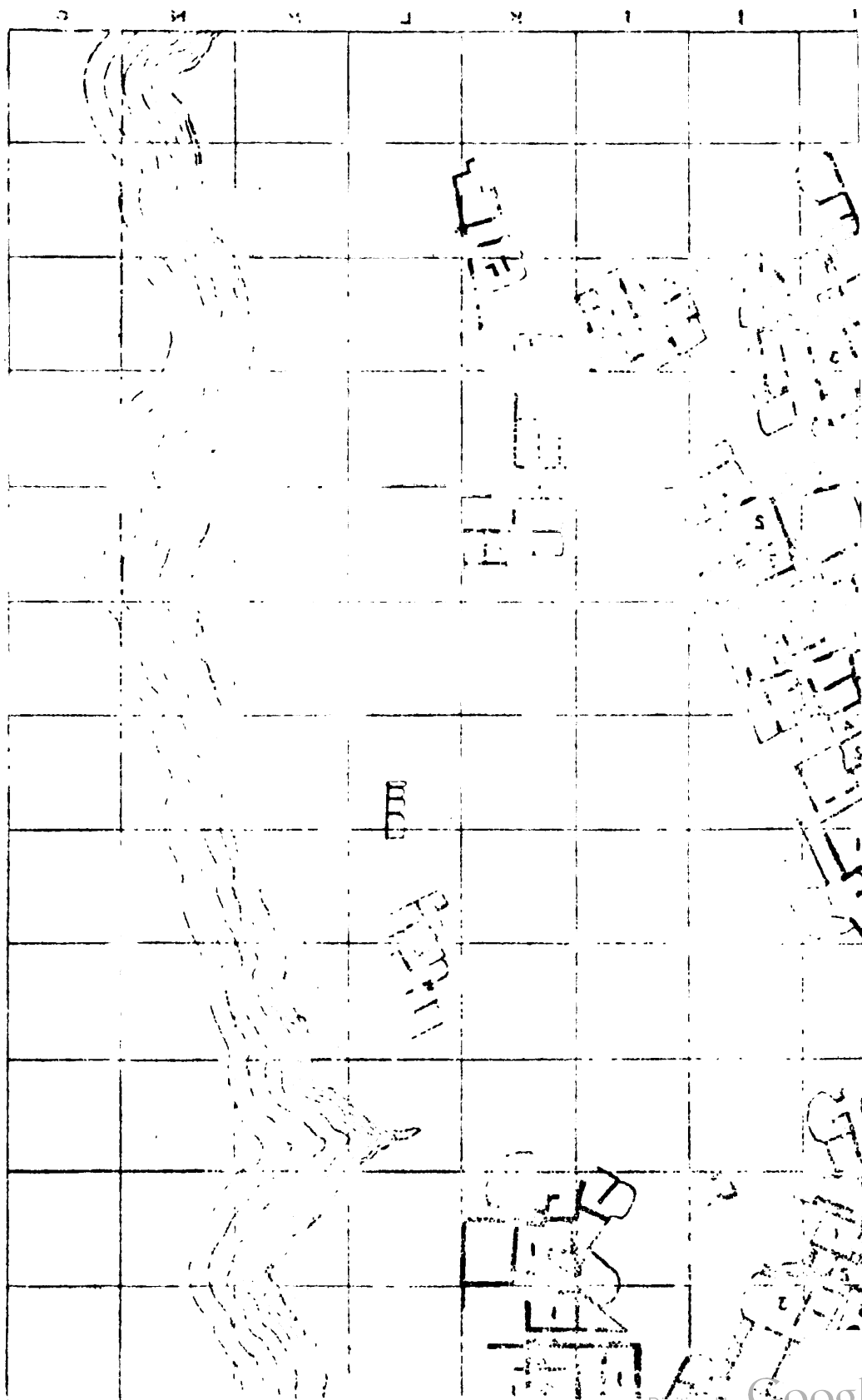
with the exception of the vase in Pl. VIII, this lamp is the best example of Minoan stone cutting found on the site. Although the vases were very numerous, it will be seen that they were confined to the very limited number of types shown in Fig. 15, which were picked out as the best examples of each variety.

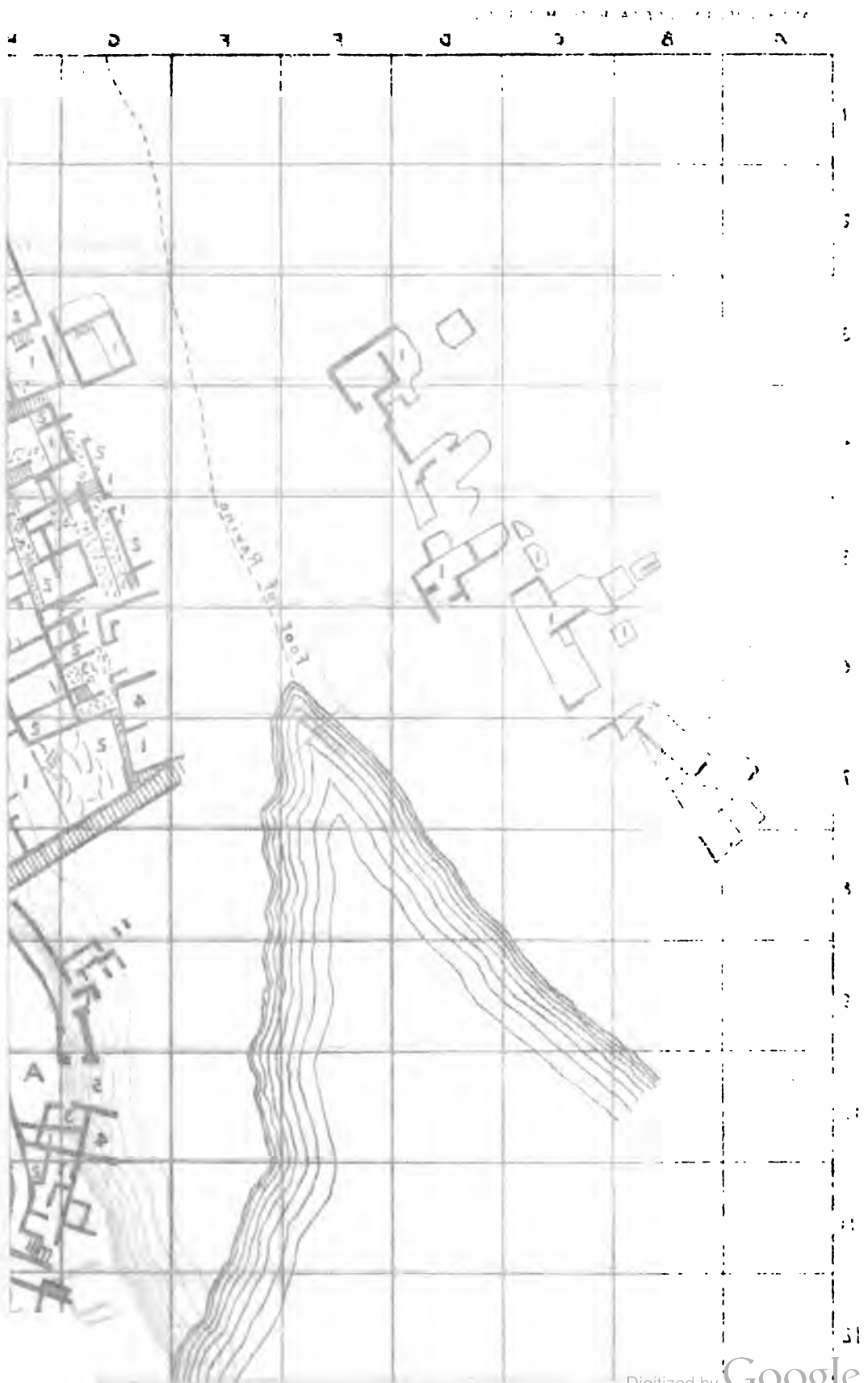
Two knife pommels in marble and a gold riveted blade show that the weapons were on a par with the other possessions of these Minoan villagers, but the scarcity of bronze in comparison with Gournia indicates that the sack of Psaira was of a more thorough nature than was the case with its mainland neighbor.

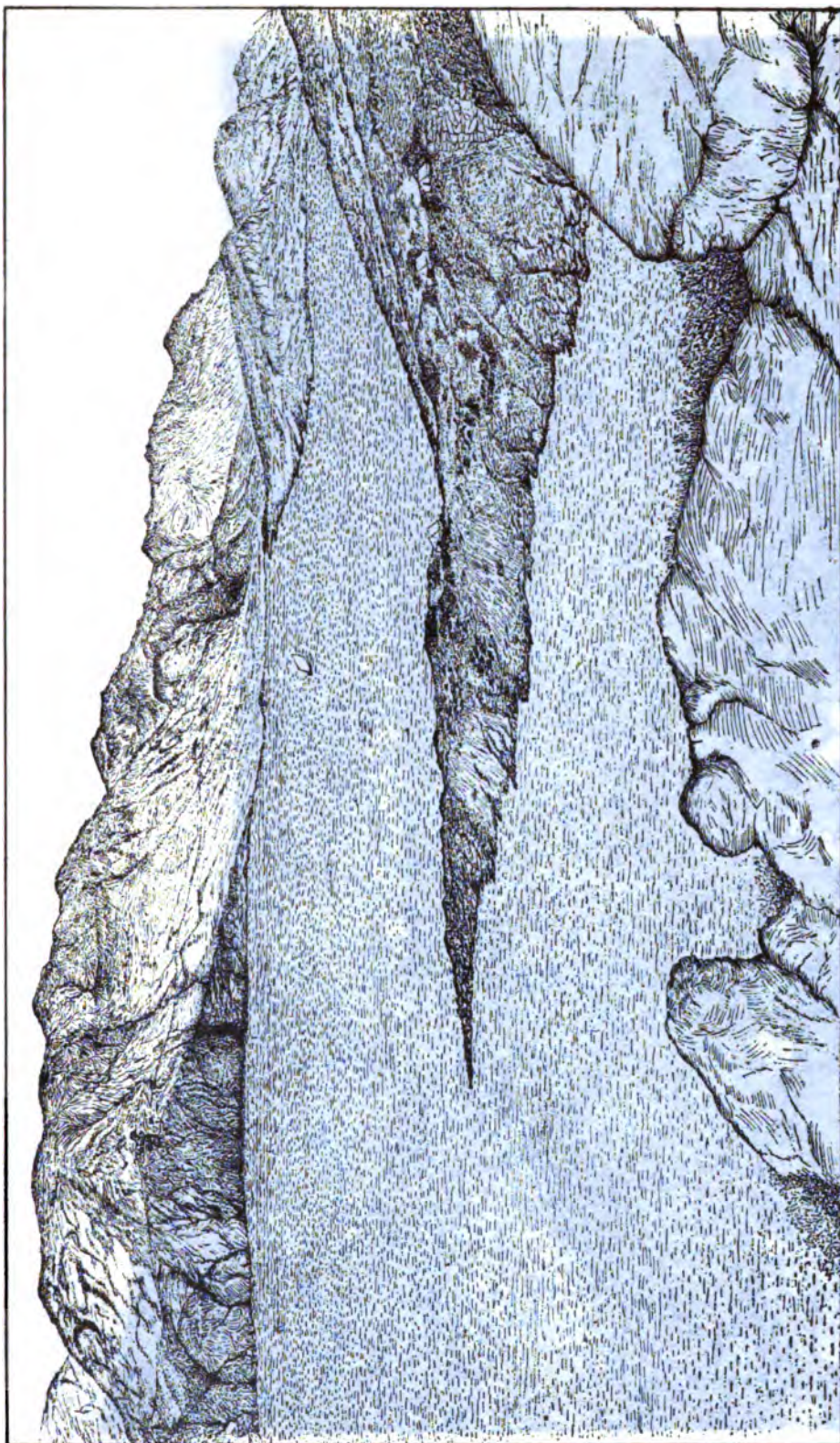
RICHARD B. SEAGER.







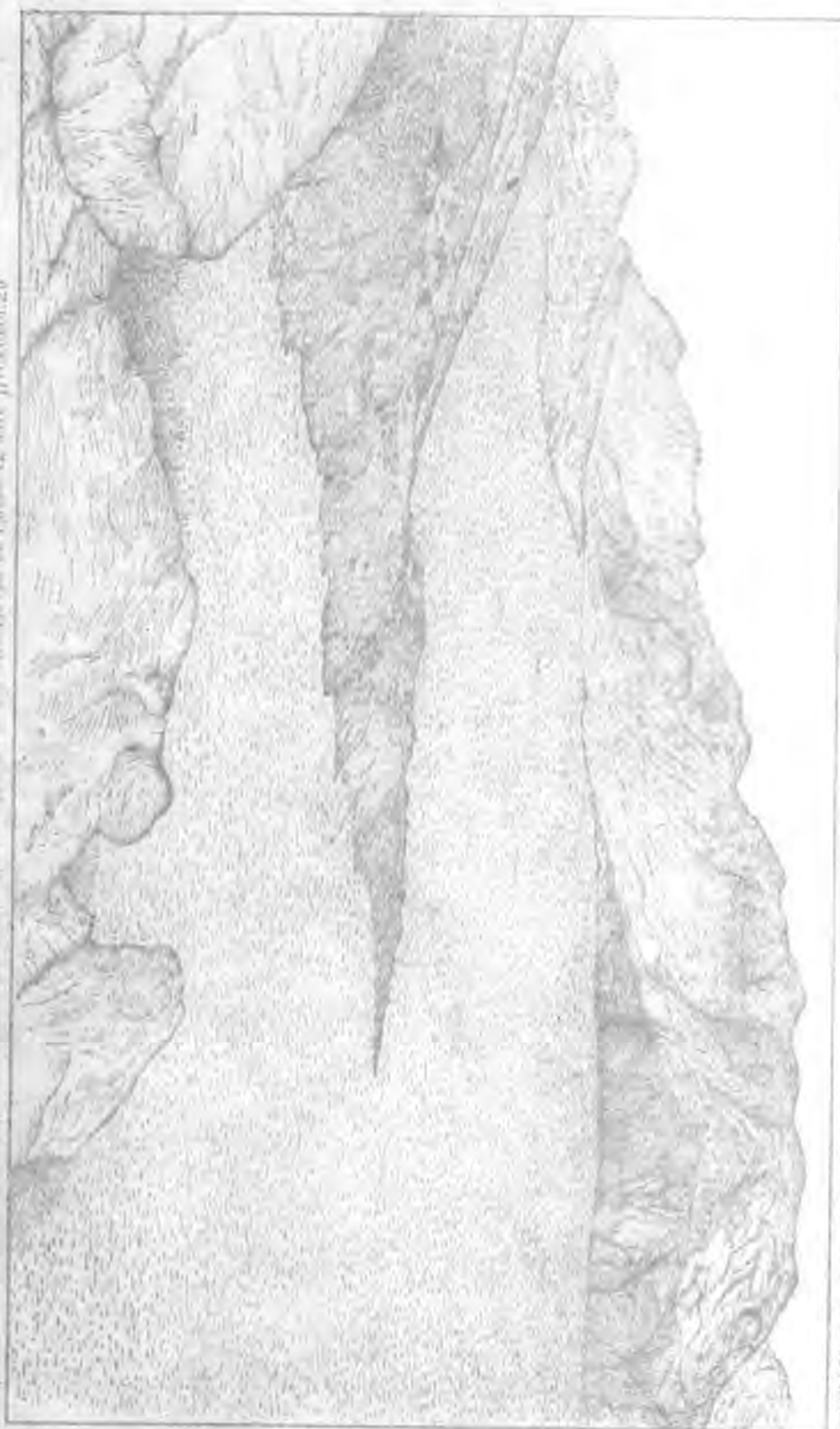




SKETCH SHOWING COVES AND SITE OF PSEIRA WITH THE COAST OF CRETE IN THE BACKGROUND.



SECTION SHOWING COVER AND SALT IN JAVIER SOUTH THE COAST OF CALIFORNIA AND THE PACIFIC OCEAN



THE PACIFIC OCEAN



VIEW OF THE TOWN OF PSEIRA SHOWING EXCAVATIONS OF 1937







PSEIRA. THE LANDING PLACE FROM THE COVE AND THE STAIRWAY LEADING TO THE TOWN





PSEIRA. FRAGMENTS OF A PAINTED RELIEF WITH OUTLINES PARTLY RESTORED





A



B



C

PSEIRA. A AND B MIDDLE MINOAN I CUPS. C LATE MINOAN I JUG





FGEIRA LATE MINOAN I VASE







PSEIRA BRECCIA VASE





PSEIRA TERRA COTTA BULL



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**EXCAVATIONS IN EASTERN CRETE  
SPHOUNGARAS**

**BY  
EDITH H. HALL**

**PHILADELPHIA  
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## EXCAVATIONS IN EASTERN CRETE SPHOUNGARAS

### INTRODUCTION.

Between the town of Gournia (Γουρνιά) and the sea-coast to the north, stretches a valley which is flanked on the east by a limestone ridge called Elatso Mouri (Ἐλάτσο Μουρί). At a distance of some 200 metres from the town the west face of this ridge is broken by a line of cliffs (Pl. X) below which the hill slopes sharply away to the valley. It was along the upper margin of this slope, which goes by the name of Sphoungaras (Σφουγγαράς), that Mrs. C. H. Hawes in 1904<sup>1</sup> found three Early Minoan rock-shelter burials. The general appearance of this slope—a steep and rocky slope facing southwest—corresponds so closely to that of the hills on Pseira and Mochlos where cemeteries were found, that since his excavations on these islands, Mr. R. B. Seager has regarded this hillside as a probable site not only for occasional Early Minoan interments like those found by Mrs. Hawes but also for the extensive burial-place of the town of Gournia.

Accordingly the Sphoungaras slope was selected for excavation, and on March 31, 1910, eight men were set to digging trial trenches near the center of the hill. Within an hour the small gold ring of Fig. 24 came to light together with fragments of Early Minoan pottery and a few bones. The same day a burial in an inverted pithos was discovered and near it many fragments of cups of a type associated both with Middle Minoan III and with Late Minoan I remains. It being thus apparent that we had to do with an extensive cemetery which was in use both in the Early Minoan

<sup>1</sup> See *Transactions of the Department of Archaeology of the University of Pennsylvania, Vol. I, Part III (1905)*, pp. 179-182 and *Gournia*, p. 56.

period and at a subsequent epoch in the bronze-age, it was decided to excavate the hill systematically with a larger force of workmen, and the next day, after trial trenches at the foot of the slope had determined the point where interments began, forty men were started in line at the foot of the hillside. The soil was found to be everywhere full of fragments of pithoi and larnakes and, here and there, where sufficient depth of earth remained, groups of unbroken pithoi came to light. Within the three weeks that the excavation lasted, 150 of these burial jars were found, the majority of which proved to be of Late Minoan I date. Since no burials of this period had been hitherto found, the Sphoungaras slope offered valuable evidence as to the method of interment employed in this epoch. Another result of the excavation was the recovery of Minoan skulls and bones which were so well preserved within their protecting walls of clay that twenty skulls could be saved, a few of which were in excellent condition. Some report of these skulls has already been made by Mr. C. H. Hawes in *Report Brit. Ass. Trans. Sections, Sheffield, 1910*; *Report on Cretan Anthropometry*, p. 3.

The other results of the excavation were given over to me for publication, although the work was under Mr. Seager's direction; to his experience and information I have been constantly indebted in writing this report. The objects found went for the most part to the Candia Museum; a few specimens were granted to the University of Pennsylvania Museum in the name of which the work was carried on and from which we received a grant of money. We were fortunate in securing the services of the English architect, Mr. F. G. Newton, to draw a plan of the site.

## THE SPHOUNGARAS SLOPE AND ITS DEPOSITS

The Sphoungaras slope, like many other steep hillsides of Crete, had been stripped of most of its soil. In this process of denudation the higher parts of the hill had become quite bare except here and there where the slipping soil had found lodgment against a boulder, or just below the cliffs where the overhanging rock protected the earth below. Near the foot of the hill the deposit of earth was sufficient to cover the tall burial jars, although some of these lay only a few inches below the surface where, in view of the centuries during which this field had undergone cultivation, it seemed incredible that a plough had not reached them. The upper part of the hill had suffered not only from the denudation of its soil, but also from the falling of boulders from the cliffs, which had seemingly broken up whatever pottery had not already been washed down the hill. The number of potsherds strewn about the lower slope bore witness to the extent of the havoc. Thus, when in the course of the excavations the upper part of the slope was reached, the deposit of earth together with the ancient remains came abruptly to an end and we saw that the area where the soil was deep enough to make excavations possible was confined to a comparatively narrow belt. There were however these exceptions: just outside the cave which had been partially cleared by Mrs. Hawes, was found a considerable Early Minoan deposit (B on plan, Pl. XV); at the top of the hill between the cliff and some boulders (C on plan) were found three pithoi together with fragments of others and as many as 8 skulls; lastly, some metres to the south—outside the limits of the plan—were found broken remnants of both Early and Late Minoan burials, which were evidently in their original position but had been crushed by fallen rocks.

The interments could be divided into two main classes, (1) burials in the earth without pithoi, the general area of which is marked on the plan by hatched lines, and (2) burials in

inverted pithoi each indicated on the plan by a circle. The pottery associated with the former was of Early Minoan II and Early Minoan III date, with an admixture of Middle Minoan I fabrics. The jars used in the latter class of burials were mostly of the Middle Minoan III and Late Minoan I periods although a few specimens, dating from the Middle Minoan I period, occurred. We have also to mention a small neolithic deposit which underlay the Early Minoan remains at the point marked

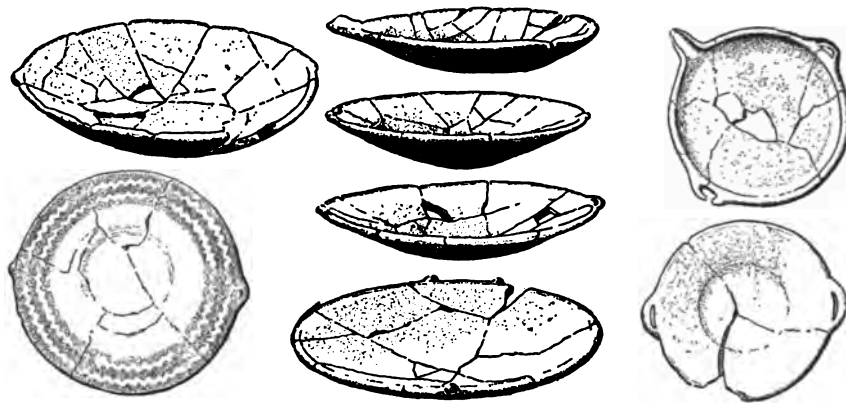


FIG. 20.—Early Minoan II Plates. Scale 1:7.

D on the plan. The walls which were found were practically negligible; only two or three small stretches came to light and these seemed to be the remains of short retaining walls rather than those of graves or tombs. The deposits will now be described in chronological order.

#### THE NEOLITHIC DEPOSIT

Ten metres south of the rock-shelter, under the Early Minoan deposit at the point marked D, there came to light a layer of black earth which was found to contain a neolithic deposit, the first which has as yet appeared on the Isthmus of Hierapetra. The position of these remains so close to a cave, recalls the megalithic house at Magasá;<sup>1</sup> but since in this case

<sup>1</sup> See R. M. Dawkins, *B. S. A.*, XI (1904-1905), p. 263.

no house-walls were found, we may suppose that a structure of some perishable material, perhaps a wattled mud hut, served as an extension to the narrow space available within the cave itself. No neolithic deposit was found in the cave or immediately outside it but this was to be expected inasmuch as it had been used as a burial place by the people of the Early Minoan period who would have probably cleared it out to make room for their dead.

The objects found in this deposit were chiefly sherds of coarse clay shading from brown to black and containing particles of white sand. Their outer surface was generally of a brownish

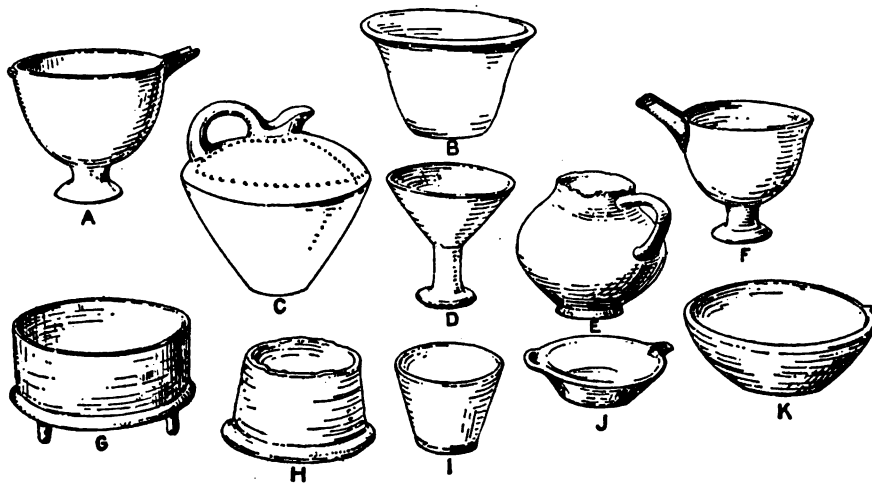


FIG. 21.—New Types of Early Minoan II Mottled Ware. Scale 1:4.

red color and rudely finished. Mr. Duncan Mackenzie, who kindly examined these sherds for me, pronounced them to be a late neolithic fabric dating from the very end of the stone-age. Among these fragments was a wish bone handle like that found in the megalithic house at Magasá.<sup>1</sup>

There also occurred a worked bone like those from Magasá.<sup>2</sup> These analogies are striking, but the pottery seems to show that

<sup>1</sup> See R. M. Dawkins, *loc. cit.*, Fig. 3, c, and Pl. VIII, 27-29.

<sup>2</sup> *Ibid.*, Pl. VIII, 11-18.

our neolithic farmstead is later than the better built one at Magasá.

#### EARLY MINOAN DEPOSIT A

The first Early Minoan deposit which we have to describe (marked A on the plan) was on that part of the hill where digging began, and extending as it did over so large an area and yielding objects so similar to those found in the Early Minoan tombs at Mochlos, there was every indication that the cemetery was to date mainly from the Early Minoan age. The deposit was from one to three feet deep and overlay hardpan or limestone so acted on by the acids of the soil as to render it soft. There was only one piece of wall found within this area. Just how the dead had been interred we could not determine; the bones which here came to light were so fragmentary that it was impossible to say whether they belonged to primary or to secondary burials. They lay loose in the earth beside the vases and ornaments that had been buried with the dead and were badly rotted. There were no traces of cremation. It is probable, in view of the evidence from other Cretan sites, that these were primary burials in "cists rudely built of small stones" like those noted by Mr. Hogarth in caves at Zakro<sup>1</sup> and by Mr. Seager on Pseira, but it is also possible that larnakes were sometimes used in this period, for among the fragments of pottery found were many heavy sherds of coarse red clay which came from straight sided vessels like larnakes.

By far the most common ware in this Early Minoan deposit was the red and black mottled pottery usually known as Vasiliki (Βασιλική) ware after the place where it was first found.<sup>2</sup> The mottled colors were still in some instances fairly brilliant although in general the soil of the Sphoungaras hill had had a disastrous effect upon the painted surface. A feature peculiar to the specimens from the Sphoungaras hill was that the inside of the vase was frequently a uniform black. Often the black

<sup>1</sup> *B. S. A.*, VII, p. 143.

<sup>2</sup> See Seager, *Transactions*, I, Part III, pp. 207-220.

extended quite evenly over the top of the outside as if these vases, like the black-topped ware from Egypt, had been placed upside down in a bed of coals.

The commonest types were egg-cups of which 8 appeared and plates of which 11 were found and 8 could be restored. No illustrations of the egg-cups are given since they correspond so closely to those from Vasiliki;<sup>1</sup> specimens of the plates are shown in Fig. 20. This shape has been found at Zakro<sup>2</sup> and at

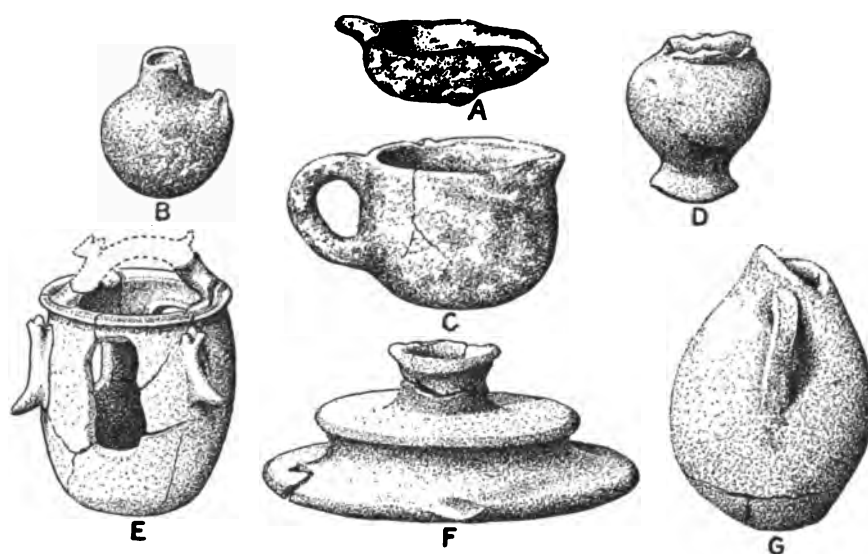


FIG. 22.—Early Minoan II Pottery. Scale 1:3.

Vasiliki,<sup>3</sup> but only a few specimens have been hitherto recovered. One plate in Fig. 20 has waved lines painted in white above the mottled surface—a method noted before<sup>4</sup> and practiced, evidently, at the very end of the Early Minoan II period.

In addition to egg-cups and plates this deposit yielded other familiar types of mottled ware such as jugs and bridge-spouted bowls and also several new shapes, which are shown in Fig. 21.

<sup>1</sup> *B. S. A.*, VII, p. 143.

<sup>2</sup> *Loc. cit.*, Pl. XXXIV, 1.

<sup>3</sup> *Transactions*, II, 2, p. 116.

<sup>4</sup> *Transactions*, I, 3, p. 116.



The jug is embellished by rows of punctuated dots arranged along the shoulder and from the shoulder to the neck.

Together with the mottled red and black Vasiliki ware there also occurred in this deposit specimens of other Early Minoan II fabrics, shown in Fig. 22. These were:

1. Small jug of coarse black clay with punctuated dots around neck (Fig. 22, *b*).
2. Tiny jug of same clay.
3. Rimmed jar with foot, of similar clay (Fig. 22, *d*).
4. Fragments of a side-spouted cup with a hatched design in dark paint on the buff ground of the clay. A cup similar to this was found at Koumása.
5. Fragments of a round bodied jug of coarse buff clay (Fig. 22, *g*).
6. Mug of coarse red clay with heavy handle and spout (Fig. 22, *c*).
7. Clay lamp similar to one found at Vasiliki (Fig. 22, *a*).<sup>1</sup>
8. "Fruit-stand" or cover (Fig. 22, *f*).<sup>2</sup>
9. A curious vase with perforated sides, and handles in the form of animals.

There were also found in this deposit the following specimens of Early Minoan III ware:

1. Round-bodied cup with design of spirals connected by groups of lines (Fig. 23, *e*).<sup>3</sup>
2. Straight sided cup with design of festoons and dots (Fig. 23, *b*).
3. Round-bodied cup with similar design.
4. Cup, elliptical in section (Fig. 23, *a*). The lunettes and dots in the horizontal band of decoration on this cup did not come out even, apparently, so the potter cut one of the lunettes in two with three diagonal lines.

<sup>1</sup> *Transactions*, II, 2, p. 122, Fig. 5, *a*.

<sup>2</sup> Several specimens of this class of vases have been found by Mr. Seager at Mochlos and by Mr. Xanthoudides at Koumása; the former thinks that they were not covers because no vases which they might fit have been found with them; the latter calls them covers because incised decoration has been found on the outside of some specimens.

<sup>3</sup> Cf. *Transactions*, Vol. I, Part III, p. 200, and Pl. XXVII.

5. Similar cup also elliptical in section. Here the potter introduced a hatched triangle to make his design come out even (Fig. 23, *c*).

6. Beaked jug, covered almost entirely with a black paint on which are horizontal bands of white and between them dotted triangles and festoons (Fig. 23, *f*).

7. Similar jug with diagonal lines of white and hatched triangles on a dark paint ground (Fig. 23, *d*).



FIG. 23.—Early Minoan III Cups and Jugs. Scale 1:3.

The stone objects which were found in this deposit are as follows:

1. Breccia bowl (4 cm. high; 6 cm. diam.), found with fragments of a larnax and a few scanty remnants of bones on the very outskirts of this deposit at a point marked E on the plan.

2. Green steatite bowl with handle (2 cm. high; 5.1 cm. diam.), found in a mixed deposit containing both Middle Minoan I and Early Minoan III pottery.

3. Small translucent green soapstone lid with four perforations (.046 m. diam.).

4. Stone arrow-head.

5. Heavy stone rings evidently used as weights.

The soapstone lid and the arrow-head lay close together beside fragments of Early Minoan II plates, which fixes their date as Early Minoan II—a date already practically certain since Mr. Seager's discovery of stone vases in Early Minoan II tombs on Mochlos.

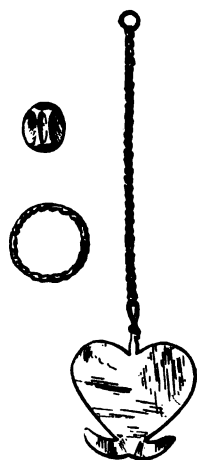


FIG. 24. — Gold Objects from Early Minoan Deposit A. Scale 2:3.

In these Mochlos tombs such delicate little stone vases were associated with beautiful gold-work which rivals in technical perfection the finest jewelry of fifth century goldsmiths. The Sphoungaras cemetery did not yield such abundance of gold objects as was found in the Mochlos tombs, but two pendant chains, one of which is shown in Fig. 24, surpass in delicacy the finest specimens from the Mochlos gold treasure. The chains are double linked and exquisitely wrought; the heart-shaped ornaments at the end are of thin gold-leaf. These pendants lay quite close to sherds of Early Minoan II red and black mottled ware.

The other gold objects from this deposit are also shown in Fig. 24; they are the gold ring already referred to and a gold bead.

Other objects of importance from this area were the following:

1. Ivory seal (Fig. 25, *a*) roughly hemispherical and crudely modelled in the form of a bird's head. The hole for suspension passes from the top through the beak. The sealing surface shows, in intaglio, the figure of a man standing between a four-legged animal and a snake (?). Similarly shaped seals have been found at Koumasa<sup>1</sup> and at Agia Triada.<sup>2</sup> The design on

<sup>1</sup> Unpublished.

<sup>2</sup> Unpublished. Here the seal is in the shape of a horse's head.

the sealing surface must be regarded as the prototype of those representations of goddesses standing between animals or birds heraldically placed, which are so characteristic of Cretan culture.

2. Ivory seal with curved top and geometric design on the sealing surface (Fig. 25, b).

This seal is similar to one from a house on Mochlos.<sup>1</sup> It may be compared, also, to two unpublished seals from Agia Triada (Nos. 463 and 438 in the Candia Museum Catalog), and to a seal published in *Mem. R. Ist. Lomb.*, 1904, Vol. XXI, Tav. X.

3. Small ivory spindle whorl.

4. Ivory idol (head missing) like those from Koumása and one from Agia Triada published in *Mem. R. Ist. Lomb.*, 1904, Vol. XXI, Tav. XI, lower row, second from the right end.

5. Bronze tweezers or snuffers (Fig. 26).

6. Triton shells.

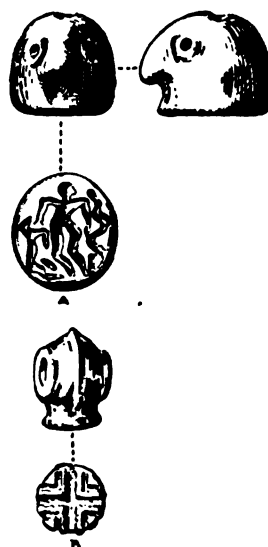


FIG. 25.—Early Minoan II Ivory Seals. Scale 2:3.

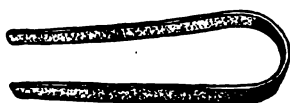


FIG. 26.—Bronze Tweezers from Early Minoan Deposit A. Scale 2:3.

#### EARLY MINOAN DEPOSIT B

The other Early Minoan deposit on the Sphoungaras hill began at a point one metre from the opening of the rock-shelter and extended west along the cliff and then south over the small neolithic stratum described on p. 46. A part of this area had been already explored by Mrs. Hawes and had yielded a number of vases.<sup>4</sup>

<sup>1</sup> *A. J. A.*, XIII (1909), p. 280.

<sup>4</sup> See *Transactions*, Vol. I, Part III, p. 179 f., and *Gournia*, p. 56. The vases here published must now, in the light of subsequent excavations, be regarded as Early Minoan II, not as Early Minoan I.

The pottery from this deposit is shown in Fig. 27 and is as follows:

1. Bird-shaped vase (Fig. 27, g).
2. Three-legged lamp (Fig. 27, f).
3. Later Middle Minoan III or Late Minoan I lamp, which must have worked down from a higher level (Fig. 27, h).
4. Small "flower-pot" of coarse black clay (Fig. 27, e).



FIG. 27.—Early Minoan II Pottery from Deposit B. Scale 3:4.

5. Four clay polishers probably used for finishing the surface of vases (Fig. 27, a, b, c, d).

6. Large red and black mottled *schnabelkanne*, 36 cm. high.

7. Three side-spouted "flower-pots" found with the *schnabelkanne* just outside the mouth of the cave.

Two small green soapstone vases were also found in this deposit, a bowl 2.5 cm. high and a little dish barely 2 cm. high with three handles and a spout. A bowl of black steatite of a type associated with a later period of stone-cutting was also

found in this deposit, having in all probability worked its way down from a higher level.

All along the margins of these Early Minoan deposits and indeed sometimes quite within their limits occurred traces of Middle Minoan III and Late Minoan I burials in inverted jars.

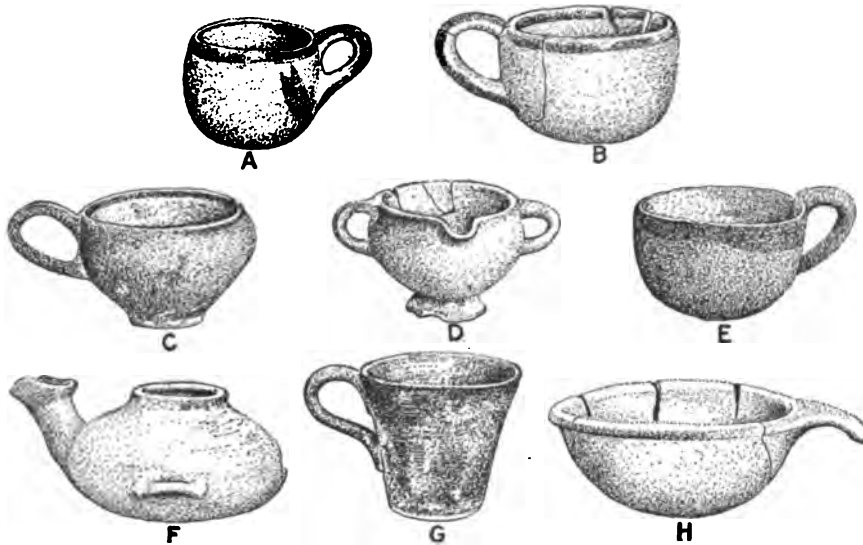


FIG. 28.—Middle Minoan I Vases. Scale 1:5.

Where such later interments were numerous the earlier deposits ceased to appear. It seems accordingly possible that the entire slope had been used as a burial place in Early Minoan times and that many of these earlier graves had been removed by later inhabitants to make room for their own dead. It is also possible that the earlier graves had been plundered by later generations and that fine goldwork like the pendant of Fig. 24 had thus disappeared. And if we are to suppose a rich and extensive cemetery on the hillside of Sphoungaras we must also suppose an extensive settlement in the town of Gournia. This is indeed the most important conclusion to be drawn from these early burials, viz. that the town of Gournia was a large and prosperous community in the Early Minoan II period.

## A GROUP OF MIDDLE MINOAN I VASES

Before describing the later pithos-burials, mention should be made of a group of Middle Minoan I vases which could not be assigned either to these later burials in jars or to the older Early Minoan interments. They lay for the most part along the northern confines of the early deposit A in an area marked F on plan, where the two types of burial—the earlier in graves and the later in jars—were mixed. Some specimens in the following list lay close to Early Minoan vases; other were adjacent to pithos-burials. Now we shall soon see that a few of the earliest burials in jars are to be assigned to the Middle Minoan I period. It is thus possible that these Middle Minoan I cups and jugs were buried along with the pithoi containing the dead. But it is equally possible that these vases had been interred in graves, for pottery of the Middle Minoan I period was found in cist graves on Pseira, adjacent to burials in jars.

These Middle Minoan I vases are as follows:

1. Two-handled side-spouted cup of hand-polished buff clay (Fig. 28, *d*). The similarity of this ware to the buff hand-polished ware of the Early Minoan II period has been pointed out by Mr. Seager.<sup>1</sup> Only by the shape may these undecorated wares of the two periods be distinguished. This vase was found close to the red and black jug of Fig. 21 and also to the Middle Minoan I jar of Fig. 31.

2. Squat vase with two small side-handles and large side-spout (Fig. 28, *f*). Traces of circles of red paint are visible on the shoulder, and lines of the same on the neck. For this reason the vase is assigned to the Middle Minoan I period; on other grounds it might well be called Early Minoan II. This vase was from a mixed deposit containing both red and black egg-cups and Middle Minoan I cups and jugs.

3. Painted bowl with central ornament in the form of a flower. (Fig. 29.) The body-paint varies from brown to black.

<sup>1</sup> See *Explorations in the Island of Mochlos*, p. 8.

On this background are painted both inside and out red and white festoons interspersed with white quirks. The petals of the flower are painted white with red dividing lines. This vase was found together with red and black egg-cups as well as fragments of other Middle Minoan I cups. Comparable cups with modelled ornaments inside were found at Palaikastro; in *B. S. A.*, IX, 1902-1903, p. 302, Fig. I, 5*a*, a specimen is shown where the central ornament is a dog. In other cups the central ornaments were birds, but no flowers were noted.



FIG. 29.—Middle Minoan I Bowl. Scale 2:3.

4. Tall straight sided cup, in shape like Middle Minoan II and Late Minoan I cups. Its painted surface varies from brown to black, a possible reminiscence of the mottled red and black Early Minoan II style (Fig. 28, *g*). Similar cups were found at Vasiliki in Middle Minoan I context.

5. Three round-bodied cups of buff clay with lines of dark paint on rim and handle (Fig. 28, *a*, *b* and *e*).

6. More advanced shape, entirely covered with black paint (Fig. 28, *c*).

7. Rim-handled bowl of buff clay (Fig. 28, *h*).

In addition to these cups and bowls, a quantity of Middle Minoan I jugs came to light (Figs. 30 and 31). They came from a comparatively small area adjacent to the area of pithos-burials. In the one case where stratification was observable, they lay above the Early Minoan III cups of Fig. 23. They need



no special comment except perhaps *b* and *g*, which are miniature examples of a type of painted jug very typical of this period. Both these painted patterns, the "plume" decoration and the circular patches of dark paint connected by slanting lines were thought by Mrs. Hawes to be characteristic of Middle Minoan

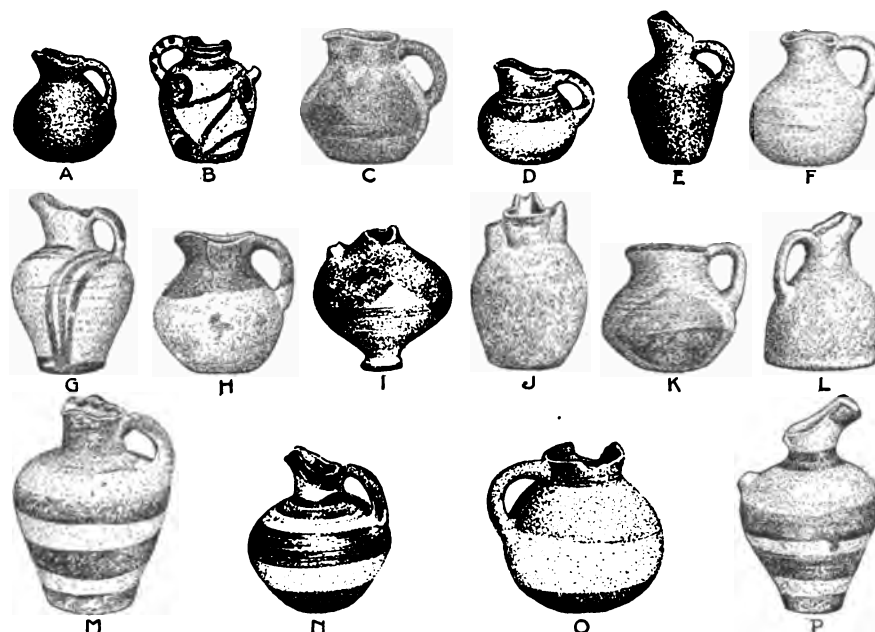


FIG. 30.—Middle Minoan I Jugs. Scale 1:4.

III ceramic art.<sup>1</sup> Subsequent excavations at Vasiliki revealed some specimens with this decoration in Middle Minoan I deposits<sup>2</sup> and later discoveries on Pseira<sup>3</sup> definitely established the fact that vases with these two types of decoration belonged not to the Middle Minoan III but to the Middle Minoan I period.

#### THE PITHOS-BURIALS

A glance at the plan will show over how wide an area the pithos-burials extended. The circles indicate, however, only

<sup>1</sup> See *Gournia*, pp. 38 and 60, and Pls. D and VI, 29 and 42.

<sup>2</sup> See *Transactions*, Vol. II, Part II, p. 128.

<sup>3</sup> See *Pseira*, *Anthropological Publications of the Univ. of Penna.*, III, No. 1, p. 19.

those pithoi which were either whole or could be restored. Inasmuch as the entire hill was strewn with fragments of heavy jars, we must conclude that the original number was far greater. Some thirty of the hundred and fifty found, those which had painted decoration and the unpainted ones which were in good condition, were taken to the excavation house; the rest were buried again in the trial trenches.

Without exception the burial-jars were placed upside down (Plates XI and XII). They were inserted neither at regular intervals nor at a uniform depth. They must have been entirely covered by earth, for sometimes a large flat stone had been laid above them as if for additional protection and such stones would never have stayed in place had they not been held in position by earth. The soil between and below the jars was generally filled with



FIG. 31.—Middle Minoan I Jar. Scale 2:3.

beach pebbles and where the pithoi stood close together, larger stones appeared, which had served as wedges to keep them in place. Sometimes covers were found underneath the jars but this was not the rule, it evidently being held preferable that the mouth of the jar should be left open. A cleaner method of burial could scarcely be devised; the body came into contact only with the clay of the inclosing jar or with the beach pebbles below it and

as the centuries passed the pithos, if it remained unbroken, kept out the infiltrating earth much more effectually than a grave lined with slabs would have done. In fact, inside the unbroken pithoi only a handful of earth appeared—doubtless the dust to which the body had crumbled.

In one instance (see G on plan, Pl. XV) a pithos was found within another pithos.

There should also be recorded the fact that among the pithoi was found a larnax (H on plan). It measured  $87 \times 44$  centimetres and was 54 centimetres high. It was without ornament, but its date must be the same as that of the Middle Minoan III or Later Minoan I pithoi in the midst of which it was interred.

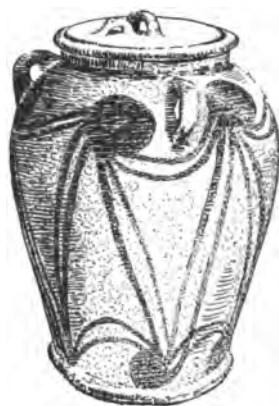


FIG. 32.—Middle Minoan I Burial-jar. Scale 1:8.

The size and shape of the pithoi differed widely. Small jars were used for children, larger ones for adults. In some cases the jars were of familiar domestic types; in fact it looked as if worn jars had been taken from the household stock and used for burials, for in several cases the rims were broken and the missing pieces were not to be found in the vicinity. Often, however, they were of a type which seems to have been made particularly for burials. Such jars as those in Fig. 35 with their small bases and awkwardly bulging sides would have been both unstable and ugly as articles

of household furniture, whereas they were admirably adapted for burials.

It was at first thought that these jar-interments were perhaps secondary burials, that the bones had been inserted in the jars after they had been cleared of flesh. But this was not the case. Several jars had become cracked around their bases (i. e. their tops in the position in which they were found) and thus by lifting off the upper part we could note the position of the bones before they had been disturbed by the removal of the jar. In several instances the bones of all five fingers were ob-



FIG. 33.—Middle Minoan III Burial-jar. Scale 1:7.

served exactly in their correct order, and again the rib-bones appeared in their proper position. In two cases the leg-bones were still upright as they had been originally when the body was inserted with the legs doubled up and the knees brought close to the chin (Pl. XIV). To prove beyond doubt that primary burials were possible in these jars, we tried putting a pithos with a broken base over the head of one of our workmen after we had seated him in the position indicated by the bones, and found

that the space was ample. It seems probable that the corpses were trussed in this sitting posture before insertion in the jars, unless, indeed, we are to believe that the Cretans, like the Libyan tribe of which Herodotus writes,<sup>1</sup> did not wait for the actual arrival of death but as their sick were expiring, forced them into a sitting position.

The height of the jars varied from 32 to 94 centimetres. By far the greater part were undecorated, and of those which



FIG. 34.—Middle Minoan Burial-jar. Scale 1:6.

were ornamented with painted designs, many could boast of nothing more than the drip pattern, a kind of decoration secured by pouring paint over the jar and letting it trickle down its

<sup>1</sup>Herodotus IV, 190.

sides. This type of decoration begins in the Early Minoan II period but is also frequent in the Middle Minoan III and Late Minoan I periods.

There were however enough jars which were ornamented with well known patterns to fix with a fair degree of certainty



FIG. 35.—Middle Minoan III Burial-jar. Scale 1:6.

the date of these pithoi-burials. The earliest specimens, decorated with curving lines and circular patches of dark paint, date from the Middle Minoan I period. Many fragments of such jars came to light. One small specimen was undamaged (Fig. 32) and a large one, though broken, could be put together, which was of importance for establishing the fact that adults as well as children were buried in jars in the Middle Minoan I period.

Four pithoi were painted in the style typical of the Middle Minoan III period, i. e., with designs in powdery white upon a purplish ground. The first (Fig. 33) is a sturdy vessel of unusual type. Its painted ornament is confined to three bands of white about the middle of the vase and four ornaments on the shoulder between the four handles. These ornaments consist of spirals, of leaf-like curls adjoining them, and of barred lobes between the spirals and the curls. This central ornament closely resembles the barred lobes on a jar from Zakro<sup>1</sup> and the design as a whole resembles that in superadded white on a beautiful jar from Pseira.<sup>2</sup>

Such similarities between the ornaments of the Middle Minoan III and the Late Minoan I periods indicate that no great time elapsed between the two. Indeed there is good evidence to suppose that the light on dark technique assigned to the Middle Minoan III period is synchronous with the earlier of the fabrics generally assigned to Late Minoan I potters.<sup>3</sup> A further observation suggested by this painted ornament is that the tendency here evinced by the potter to fill the space between two spreading curves with a flower or bud is one of the most characteristic tendencies not only of later Minoan art,<sup>4</sup> but also of Ionian vase-painting. Messrs. J. H. Hopkinson and John ff. Baker-Penroyne have pointed out the resemblance between such flower and spiral combinations on vases from Phylakopi and on later "Melian" amphorae.<sup>5</sup> The same similarity exists between Middle Minoan III designs and those on "Melian" amphorae, Klazomenai sarcophagi and "Fikellura" ware.

The other Middle Minoan III pithoi are alike in shape except that the foot of one is more slender. They all have grooves below the rim which would have held a rope in place,

<sup>1</sup> *J. H. S.*, 1903, Vol. 23, p. 253, Fig. 18.

<sup>2</sup> *University of Pennsylvania, The Museum, Anthropological Publications*, Vol. III, No. 1, Excavations on the Island of Pseira, Pl. VII.

<sup>3</sup> Cf. R. M. Dawkins in *B. S. A.*

<sup>4</sup> Cf. the Late Minoan III designs in Figs. 64-66 in Hall, *Decorative Art of Crete in the Bronze Age*, p. 43.

<sup>5</sup> See *J. H. S.*, XXII (1902), p. 66.

had occasion arisen of lifting these jars with ropes, and most of them have also projecting rims around the base by which they could be gripped. The decoration of two of these jars is shown in Figs. 34 and 35. Among the decorative motives of the fourth jar, which is not shown, is the foliate pattern which occurs on the



FIG. 36.—Unpainted Burial-jars of Typical Shapes. Scale 1:14.

shoulder of the jar in Fig. 11, p. 30, of the preceding report on *Pseira*. It is a pattern particularly characteristic of the later "Palace Style."

It seems strange that jars with such perishable decoration in fugitive white should have been used for insertion in the ground. Yet we can imagine that these delicate patterns would have shown up well in a funeral procession and that the beauty of the vase would have been a source of pride to a prosperous citizen of Gournia.

The Late Minoan I pithoi which bore painted decorations were two in number. The one with a slender base may be compared to the jars in *Gournia*, Pl. K, and to preceding report on *Pseira*, p. 33, Fig. 14. The decoration of this jar consists



of zone above zone of spirals or wheels interspersed with small rosettes, all painted in the manner typical of the Late Minoan I period (Fig. 37). The decoration of the other jar is a kind



FIG. 37.—Late Minoan I Burial-jar. Scale 1:12.

frequently found on the pottery from Gournia<sup>1</sup> and consists of small circles of dark paint upon a dotted background.

It cannot be said that the men who were buried in these pithoi were richly equipped for their journey to the realms of the dead. It was hoped that the jars might yield many small



FIG. 38.—Vase Found Inside Burial-jar. Scale 1:3.

ornaments comparable in number and beauty to the small objects which were buried with earlier generations at Mochlos, and in this hope every bit of earth from the pithoi was carefully examined, but it was only occasionally that the search was rewarded. From the total number of 150 pithoi found only 15 proved to contain anything else beside the skeleton. Almost no pottery, e. g., was found, the only exception of note being the vase of Fig. 38. It was quite usual to find deposits of

<sup>1</sup>Cf. *Gournia*, Pl. VII, 40.

pottery adjacent to the pithoi but since the favorite offerings to the dead had been fragile cups, there was nothing left but hopelessly broken fragments. As many as ten baskets of small cup-fragments were recovered. They were mostly of two types, shown in *Gournia*, Pl. VI, 5 and 36, and were decorated with spirals or fern patterns painted in white or more rarely in red on a ground-paint which was sometimes reddish, and sometimes brown or black. These cups, as said above, are equally characteristic of the Middle Minoan III and of the Late Minoan I period. The only other piece of pottery to be recorded was a lid painted with marguerites (Fig. 39). It was found underneath one of the burial jars.

Beads were the objects which most frequently occurred



FIG. 39.—Lid Found Beneath Burial-jar. Scale 1:3.

within the pithoi. They were often of clay and of the simplest types. Occasionally they were of bronze, steatite (see Fig. 40, *a*), or of blue porcelain. In one case they were found adhering to the skull.

Bronze objects were not uncommon. The largest was an axe-head in the socket-hole of which a piece of wood still re-

mained (Fig. 41). It must have been a votive or symbolical axe for both the axe-head itself and the wooden handle are too slender for practical use. Perhaps it had prophylactic value; we know that single axe-heads shared the sacred character of the more common type of double axe. The bronze hairpin of Fig. 42 was found in the same pithos as the carnelian seal of Fig. 45, *d*.

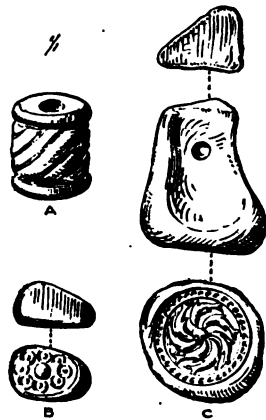


FIG. 40.—Clay Seals and Steatite Beads. Scale 2:3.



FIG. 41.—Bronze Axe-head Found Inside Burial-jar. Scale 1:2.

That bronze was highly enough prized to be used for jewelry is shown not only by bronze beads but also by three bronze rings. Two of these have plain bronze bezels (Fig. 43, *a*); like the Early Minoan gold ring they are of very small dimensions (diam. 1 cm.) so that they must have been worn either on the little finger of a child's hand or on the last joint of an adult's little

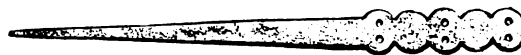


FIG. 42.—Bronze Pin Found Inside Burial-jar. Scale 1:2.

finger; or perhaps they were suspended from a necklace. The third bronze ring (Fig. 43, *b*) had a crystal bezel, which had fallen from its setting and had worked its way several centimetres through the soil. The decoration is very simple and consists of

a barred triangle and lines. This ring furnishes the only instance, so far as I know, of a sealstone set in a ring. In the same jar with the bronze ring appeared a heavy lead ring, the bezel of which is decorated with the figure of a woman (Fig. 44).

The most interesting objects found in the pithoi were sealstones, not because they presented new or rare types, but because, being found in jars that were known to be of the Middle Minoan III or of the Late Minoan I period, their date could be fixed with a fair degree of certainty. Had they not been in this earlier context they would have been probably assigned, on the ground of their conventional types, to the Late Minoan II or to the Late Minoan III period. It now appears, however, that some of the hackneyed types like that of the squid were already in use, were, indeed, conventionalized, and carelessly rendered as early as the Middle Minoan III or at any rate the Late Minoan I period.

These sealstones are as follows:

a. Small red carnelian seal with the representation of a door or perhaps the façade of a temple on either side of which is a tree. This seal may be compared with the seal in 'Εφ. 'Αρχ., 1907, πιν. 7, No. 47a (Fig. 45, g).

b. Large red carnelian seal with design of vase and plants Compare *loc. cit.*, πιν. 7, No. 47, β and γ (Fig. 45, f).



FIG. 44.—Lead Ring Found Inside Burial-jar. Scale 2:3.

c. Rock crystal lentoid seal with geometric design. (Fig. 45, h).

d. Amethyst amygdaloid seal with squid ornament (Fig. 45, c). For similar representations of a squid compare *loc. cit.*, πιν. 7, Nos. 51 and 81.

e. Red carnelian lentoid seal with design in the form of a conventionalized vase (Fig. 45, d).

f. Red carnelian amygdaloid seal with squid ornament more conventionalized than in d (Fig. 45, e).

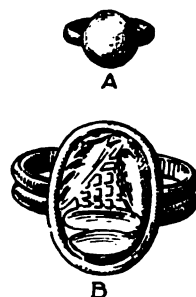


FIG. 43.—Bronze Rings from Burial-jars. Scale 2:3.

g. Small amethyst seal in shape of a flattened cylinder with heart-shaped design, and on the reverse pictographic (?) signs (Fig. 45, *a*).

h. Small amethyst lentoid seal with a fish, sea-urchin, and other marine devices (Fig. 45, *b*). Cf. *loc. cit.*, πιν. 7, No. 94 (Fig. 29, *a*).

There were also found two clay seals; the one lay adjacent to a pithos burial, the other (Fig. 40, *c*), like the Middle Minoan I pottery on the confines of the Early Minoan I deposit A, in a region where the Early Minoan interments and the later pithos burials were confused. Its date therefore is not fixed, but the graceful design of a whorl of fishes certainly seems older than the Late Minoan period.

These sealstones, then, do not help to date their context but on the contrary they all, with the exception of the clay seal

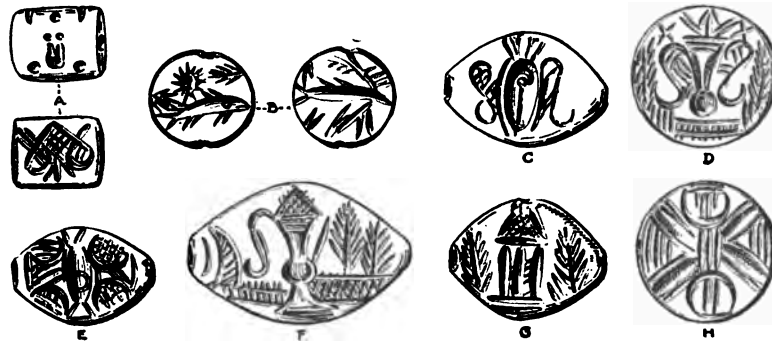


FIG. 45.—Sealstones Found Inside Burial-jars. Scale 1:1.

last mentioned, may be said to be dated by it. The other objects, however, found within the jars and the pottery adjacent to them confirm the evidence which was derived from the patterns on the pithoi themselves and which went to show that these burials belong to the Middle Minoan I, the Middle Minoan III, and the Late Minoan I periods.

Sporadic instances of squat burials in jars have occurred before in Crete. At Knossos a child burial was found in an inverted Middle Minoan III jar and at Pseira child burials were

found in both Middle Minoan I and Middle Minoan III jars. At Vrokastro also, were found this year two child burials in jars—not inverted—adjacent to house walls. Such sporadic cases are of great value in helping to modify the discrepancy between the jar burials of the Sphoungaras cemetery and the widely divergent methods of other Cretan cemeteries, for they indicate that in more than one place and at more than one time was it the custom to bury children in jars. A possible hypothesis is that in no period of Cretan culture was it foreign to Minoan custom to bury the children in jars, but that in the three periods specified the practice was extended to adults as well as to children. Another possible hypothesis is that the poor only buried the dead in jars. This is the custom in some districts of China today; the poorer people for the purpose of economizing space, squeeze the bodies of their dead into jars. The citizens of Gournia, however, seem too prosperous to warrant such an explanation. In spite of the fact that a certain amount of conservatism would be expected in regard to burying the dead, the truth seems to be that the Cretans of the Bronze Age experimented a good deal in this matter. The following table (p. 73) shows the different kind of burials found up to date in Crete; in some cases the cemeteries are on steep hillsides like Sphoungaras where tunnels were driven almost horizontally into the hill, in other cases, like the long narrow burial rooms of Palaikastro they are on nearly level ground.

The occasional appearance of this crude method of burial side by side with other more civilized practices is not an isolated phenomenon. In Egypt the custom of "interment under pots appears in upper Egypt at the close of the predynastic period and is uniformly continuous through the early dynasties to the advent of the Fourth. It is associated with other early modes of burial. As a practice it is not common but constant; nor is it demonstrably representative of poorer or richer people or of a differing element of race."<sup>1</sup>

<sup>1</sup> Garstang, *Tombs of the Third Egyptian Dynasty at Raqâqnah and Bît Khallâf*, 1904, pp. 50-57.

A similar phenomenon moreover existed in all probability in Greek lands. At five sites—Thorikos, Aphidna, Aigina, Tiryns, and Arkesine on Amorgos—jar burials have been found which in the opinion of their excavators date from the “premycenaean” period.<sup>1</sup>

In the absence of full publications of the pottery found with these burials, their date remains somewhat uncertain but it seems probable that during the early bronze age, jars instead of graves were occasionally used for burying the dead, at more than one place on the Greek mainland.

All these graves were thought by M. Stais and by Dümmler<sup>2</sup> to be the graves of a people who were quite distinct, racially, from the later Mycenaeans; they were called variously Carians, Lycians and Pelasgians. M. Tsountas alone maintained the opinion that a difference in burial did not necessarily imply a difference in race. In its bearing on this question, the evidence from Sphoungaras is apparently decisive, for it shows that the highly developed Minoan civilization as well as the older and more primitive societies of the mainland sometimes buried their dead in jars. This cemetery, moreover, serves to connect such earlier sporadic instances of burials under jars with the later practices of the geometric period.

<sup>1</sup> For this list of pithos-burials I am indebted to Zehetmaier, *Leichenverbrennung und Leichenverstellung im alten Hellas*, p. 43. For the few particulars which are given about these burials see for those at Thorikos: 'Εφ. 'Αρχ., 1895, p. 228 f; for those at Aigina where no pithoi were recovered but only the circular pits in which they had stood, id., p. 248; for those at Aphidna, *Athen. Mitt.*, 1896, p. 385 ff; for those at Tiryns and Arkesine on Amorgos, 'Εφ. 'Αρχ., 1898, p. 210.

<sup>2</sup> Cf. also Perrot and Chipiez, *Histoire de l'art*, II, p. 373.

Early Minoan I.	No graves found.		
Early Minoan II.	Rock shelters,	Zakro, Hagios Nikolaos, Hagia Photia, Sphoungaras, Mochlos,	<i>B. S. A.</i> , VII, p. 143. <i>B. S. A.</i> , IX, p. 340. <i>Gournia</i> , p. 56. <i>Ibid.</i>
	Cist graves,	Sphoungaras,	On evidence of loose stones. Unpublished.
	Rectangular chamber tombs (roofed).	Pseira, Mochlos, Mochlos,	<i>Explorations in the Island of Mochlos</i> , p. 13.
	Circular chamber tombs (unroofed?),	The Messara Hagia Triada, Koumasa, Sphoungaras,	Mem. R. Ist. Lomb., XXI, 1905. Unpublished.
	Larnakes,		On evidence of fragments.
Early Minoan III.	All the types of graves found in the Early Minoan II period occur here also.		
Middle Minoan I.	Rock shelters,	Hagia Photia,	<i>Gournia</i> , p. 56.
	Cist graves (reused),	Pseira,	Unpublished.
	Narrow burial chambers,	Palaikastro, Gournia, Vasiliki, <sup>1</sup>	<i>B. S. A.</i> , VIII, p. 291. <i>Gournia</i> , p. 56. <i>Trans.</i> , Vol. II, Part II, p. 115.
	Circular chamber tombs (unroofed?).	The Messara,	Unpublished.
	Larnakes,	Sphoungaras,	On the evidence of fragments.
	Burial jars,	Pseira, Sphoungaras,	Unpublished.
Middle Minoan II.	No graves found.		
Middle Minoan III.	Cist graves (reused),	Pseira,	Unpublished.
	Burial jars,	Sphoungaras. Mochlos,	<i>Explorations in the Island of Mochlos</i> , p. 14.
Late Minoan I.	Burial jars,	Sphoungaras. Mochlos,	Unpublished.
Late Minoan II.	Rectangular chamber tombs of squared blocks, and roofed,	Isopata,	<i>Prehistoric Tombs of Knossos</i> , pp. 136 and 1-21.
	Pit graves, } Shaft graves, }	Zafer Papoura,	Id., pp. 1-21. Id., pp. 1-21.
Late Minoan III.	Larnakes,	Gournia,	<i>Gournia</i> , pp. 45 and 46.
	Beehive tombs,	Hagios Theodoros,	<i>Transactions</i> , II, Part II, 1907, p. 131.
		Anoia Messaritica and Milatos,	<i>Mon. Ant.</i> , 1889, p. 201.
		Palaikastro, Episkopi, Erganos, Panagia and Courtes, Zafer Papoura,	<i>B. S. A.</i> , VIII, p. 303. Unpublished. <i>A. J. A.</i> , 1901, Vol. XI, p. 259 ff. <i>Loc. cit.</i> , pp. 1-21.
	Pit graves, Shaft graves, Rectangular chamber-tombs.		

<sup>1</sup> Here the burial chambers contained larnakes.







THE HILL, SPOUNGARAS, WHERE THE CEMETERY OF GOURNIA WAS DISCOVERED.





BURIAL-JARS IN SITU.





A BROKEN BURIAL - JAR WITH SKELETON INSIDE





SKELETON AS IT APPEARED AFTER REMOVAL OF BURIAL - JAR.

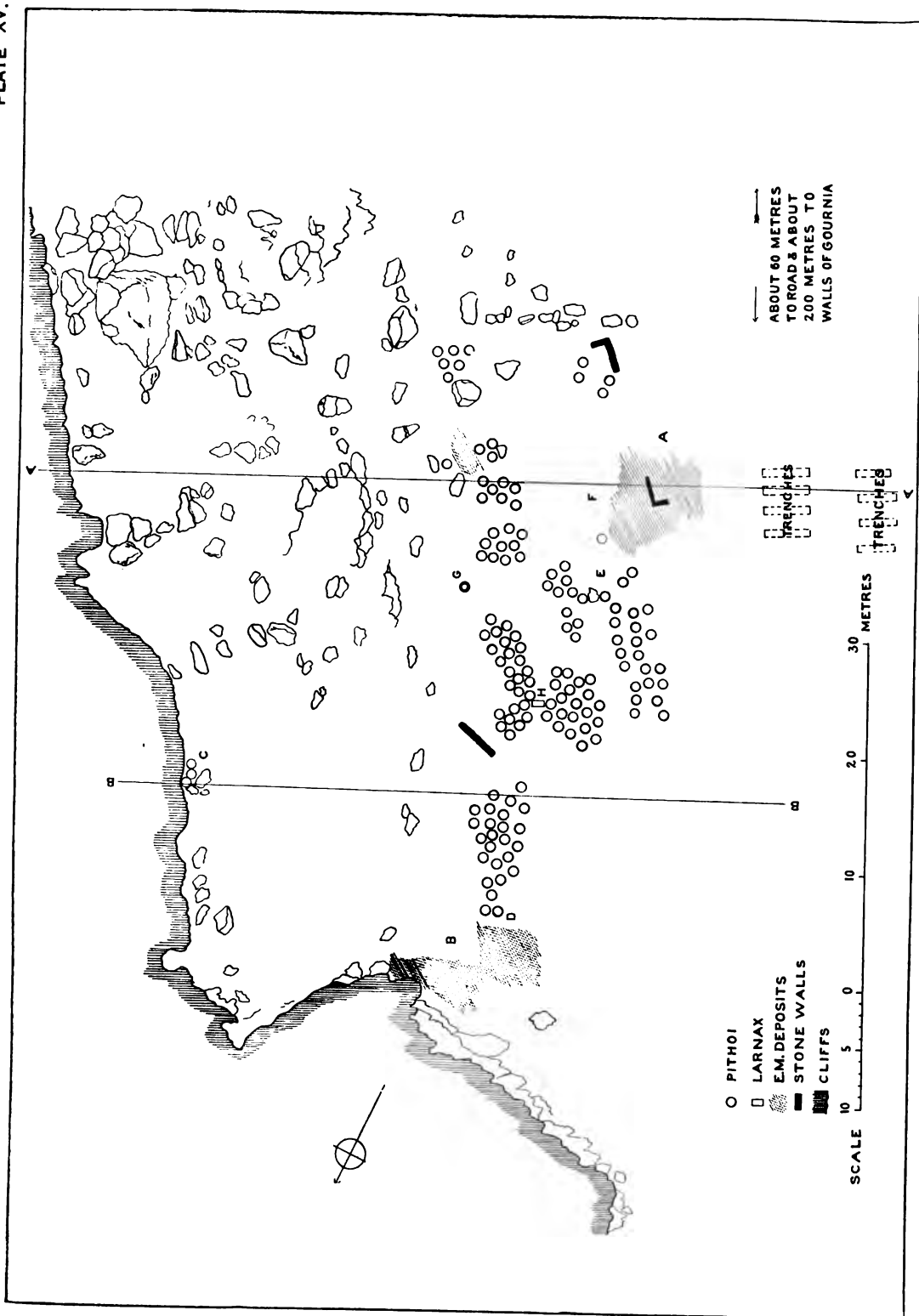




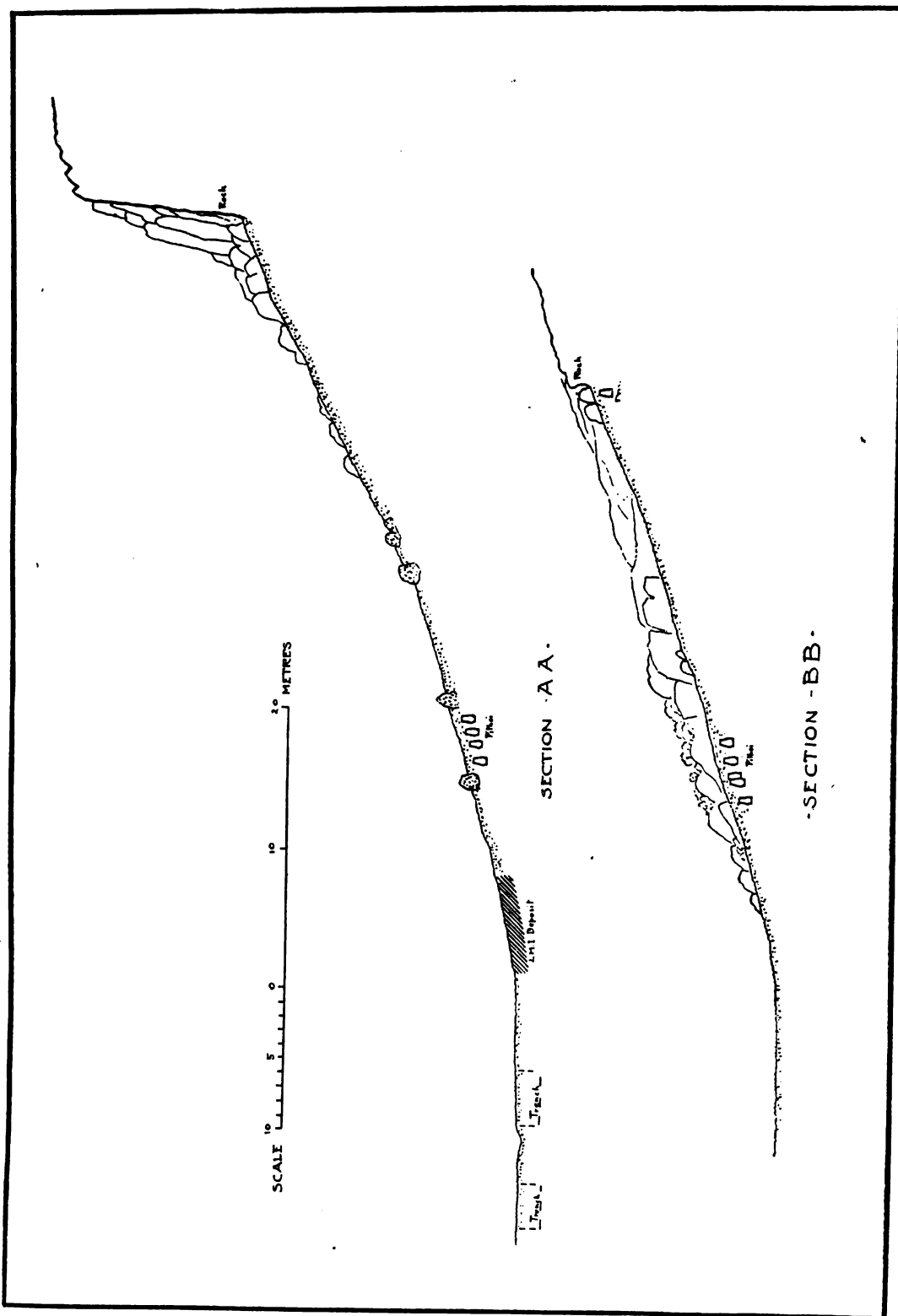


SKELETON AS IT APPEARED AFTER REMOVAL OF BURIAL - JAR









CROSS SECTIONS OF GOURNIA CEMETERY.



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EXCAVATIONS IN EASTERN CRETE  
VROKASTRO

BY  
E. H. HALL

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## EXCAVATIONS IN EASTERN CRETE, VROKASTRO.

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### INTRODUCTION.

During the last decade and a half, the excavations which have been carried on in the island of Crete have been confined almost entirely to sites dating from the bronze age. The splendid results of these excavations are now so well known as to need no recapitulation. Successive stages have been traced in the history of a brilliant civilization which had its rise in a remote era of the third millennium and maintained itself until the closing centuries of the second millennium B. C. It is only natural that while the attention of the archæological world has been focused on these Minoan discoveries the more primitive culture of the succeeding age of iron should have received less than its due share of honor. Pottery ornamented with geometric patterns, the characteristic product of the iron age, has been found in abundance in Cretan soil, but of the vases decorated in this geometric style which have been brought into the Candia Museum, many, found by peasants, have not been published at all; others, unearthed by archæologists, have been but scantily described and inadequately reproduced.<sup>1</sup>

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<sup>1</sup> The principal publications dealing with geometric remains of Crete are: Orsi, *A. J. A.*, 1897, pp. 251-265; Boyd, *A. J. A.*, 1901, pp. 125-157; Halbherr and Mariani, *id.*, pp. 259-314; Hogarth, *B. S. A.* VI, pp. 82-85; Bosanquet, *id.* VIII, pp. 231-251; Droop, *id.* XII, pp. 24-62; Mackenzie, *id.* XIII, pp. 428-445; Mariani, *Mon. Ant.* VI, pp. 342-348 and Pl. XII, 58-62; Halbherr, *id.* XII, pp. 114-118; Wide, *Jahrbuch*, 1899, pp. 35-43; *Athen. Mit.* XXII, pp. 233-258.

There have not been wanting, however, scholars who have realized the importance of this period; Dr. Duncan Mackenzie in his masterly analysis of the pottery of the early iron age<sup>1</sup> has indicated the probable place of the Achæan invasion in the series of inroads by northerners into the island. Certainly it is by a detailed study of the remains of this epoch that the relations of the Minoan culture to that of classical Greece may best be determined. The more exact our knowledge of this period, the clearer our conception of the extent and date of invasions intermediate between the fall of Minoan power and the dawn of classical Greece.

It was in the hope of throwing light on such problems of ethnology and chronology that excavations were undertaken for the University Museum at a lofty site called Vrokastro. This hill had been visited by Mrs. C. H. Hawes and Mr. R. B. Seager in 1903 and, on the evidence of numerous walls and of sherds picked up on the surface, had been regarded as a promising place for geometric remains. Two campaigns were devoted to this site; the earlier in 1910 lasted but three weeks, the second was carried on during May and June, 1912. The number of men employed ranged from twenty-five to sixty, according to whether houses or tombs were being dug, a smaller number being required for tombs. The men who worked with picks and knives were mostly veterans trained at previous excavations; the rest of the force was enrolled at the neighboring village of Kalo Khorio (Καλὸ Χωριό). The work was under the supervision of the writer; she was, however, greatly aided by the advice of Mr. Seager, who paid frequent visits to the excavations. To Mr. Seager's courtesy the expedition was also indebted for the loan of excavation tents, for the use of his house at Pacheia

<sup>1</sup> *Loc. cit.*

Ammos as headquarters, and for help in the difficult matter of procuring supplies. It is a pleasure also to acknowledge the kindness of Mr. Hagidakis and Mr. Xanthoudides, who, as heretofore, did all in their power to aid the Museum's work in Crete.

Vrokastro<sup>1</sup> (Βρόκαστρο), a shortened form of Ἐβραϊό-καστρο, is the name given to a steep limestone spur which rises to a height of nearly a thousand feet on the east side of the green and picturesque valley of Kalo Khorio. Its north and west faces are scarcely accessible, but on the east there is a winding path used by goatherds and by those who cultivate the small terraces built here and there against the mountain-side. The south face is connected by a saddle with the hills behind. With the exception of a few of the steepest crags, this entire mountain, from the summit to the sea, is strewn with potsherds. House-walls and retaining walls may also be traced among the bushes, and enough of these have been examined to show that they belong to the geometric period. The appearance of Vrokastro at the height of its power must have been similar to that of an Italian hilltown of to-day.

That so steep and barren a mountain should have been chosen as a place of human abode invites speculation. Two reasons present themselves. To a people living in fear of sudden invasion by sea, Vrokastro presented marked advantages. The north face of the mountain is broken by crags and pointed pinnacles of rock which would have served admirably as lookouts.

<sup>1</sup> This is a common place-name in Greek lands, cf. Pernot, *Melodies populaires grecques de l'isle de Cbio*, song 48, p. 63:

ὅλα τὰ κάστρα ἐπῆγα, κάστρ' ἐγύρισα  
σὺν τῆς Ἐβριᾶς τὸ κάστρο, κάστρο δὲν εἶδα.

Watchmen stationed here could have discerned boats far out at sea and could have signaled their approach to men sowing or harvesting in the plains below in time to allow them to reach safely the high retreat on the summit before the hostile boats were beached. Moreover, Vrokastro was but a part of the iron age settlement. On the hills to the south, especially on Karakovilia (Καρακοβίλια), which lies immediately behind and which is joined to Vrokastro by a saddle, were found both houses and tombs. A circuit of five kilometers indeed would scarcely include the district where traces of geometric remains abound. For this entire area as well as for the valley of Kalo Khorio, Vrokastro would have served as a lookout and citadel. Again, we may suppose that at some stage at least in the history of the site the valley had been seized by invaders who had reduced their predecessors to the position of *perioikoi* and driven them to the less promising districts like Vrokastro and the hills behind it.

The sketch map of Pl. XVII shows the relation of Vrokastro to the neighboring localities where excavations were carried on. With the exception of Kalo Khorio there is no village at any of these places; the names are given by Cretan custom to the land itself, each ridge, valley, or mountain-peak having its own special name. Karakovilia, Mazi Khortia (Μαζυχορτιά), and Amigthali (Ἀμυγδάλι) are three rough, upland moors as wild and rocky as Vrokastro but with less precipitous faces. Kopranes (Κοπράνες) is a foot-hill of Vrokastro and is only a little higher than the Kalo Khorio valley.

The short campaign of 1910 was devoted to the summit of Vrokastro in the hope that some trace of a shrine might there be brought to light. Nothing, however, save the tangle

of house-walls shown in Pl. XVIII appeared. The depth of deposit, which was sometimes as much as three meters, seemed remarkable for so bare and rugged a mountain. The object of the season's work in 1912 was first to clear more houses and ascertain the date of the walls along the northern face of the mountain, and secondly to find the tombs belonging to this settlement. The men were accordingly set to work at the opening of the season to clear a stretch of hillside on the north face of the mountain, some 100 meters below the summit. The main force of workmen was occupied here for a month, though now and again men were detailed either to sink trenches adjacent to house-walls further down the slope or to try places which promised well for tombs.

The very first day, in fact, a workman was sent to Karakavilia to a spot which had attracted my attention in 1910, but which could not then be conveniently tested, inasmuch as it lay beneath a guy rope of a tent. The place was marked by a pile of tumbled stones, and proved upon investigation to be the site of a rectangular chamber-tomb. It is somewhat doubtful whether the pile of stones which appeared on the surface was really a part of the fallen roof of the tomb; it may have been merely a chance occurrence. The best clue, as we later learned, for locating such tombs was the white, chalky soil called "kouskoura," from which they were cut. Most of them, moreover, were built under the shelter of a ledge or projecting spur of rock so that they might be protected against the disasters of washouts.

It was hoped that with the discovery of this large chamber-tomb, the cemetery of Vrokastro had been located and that the finding of other tombs would be an easy task. But such was not the case. Trial trenches sunk in the neighborhood of this



tomb revealed nothing but house-walls, and subsequent experience pointed also to the conclusion, that tombs had been interspersed among houses. Later in the season the workmen of the third class were sent away and the rest of the force began a systematic search for burials. As a result two more chamber-tombs and six bone-enclosures were found at Mazikhortia; another chamber-tomb, a cave burial, and a pithos interment were found at Amigthali; and both chamber-tombs and bone-enclosures were found further down the mountain at Kopranes. And everywhere, both adjacent to these tombs and in places where search for tombs was unsuccessful, house-walls of the geometric period constantly came to light. These were no more than tested except on Vrokastro in the spots already mentioned.

In several places Minoan remains were located, and first on Vrokastro itself, where the Minoan vases described below were found at a low level. North of the Kopranes graves, a Minoan house was dug which yielded Late Minoan I potsherds and a good sealstone. At Kato Arniko (Κάτω Ἀρνικό) an Early Minoan cave was cleared, and lastly, at a little promontory called Priniatiko Pirgo (Πρινιατικό Πύργο), an extensive Minoan settlement was discovered which yielded during the week that excavations were carried on there, beautiful specimens of the Vasiliki mottled style, of rippled bowls, and of other Late Minoan I products, (Fig. 46). The pottery was splendidly preserved. The only disadvantage of this site as a place for future excavations is that the upper deposit dates from the Roman period, and that Roman walls have in many places cut into the Minoan remains. This promontory of Priniatiko Pirgo was doubtless the shipping station for a large Minoan town which must be sought further up the Kalo Khorio Valley

near and under the present village of Kalo Khorio. Excellent sherds of the Middle Minoan III and Late Minoan I periods were brought to us by peasants working the thick alluvial soil between the village and Kato Arniko.



Fig. 46. Minoan Pottery from Priniatiko Pirgo (1 : 6).

Mention should also be made of an extensive Græco-Roman site located on the peninsula called Nisi (Νῆσι). Coins of Aluntium are frequently found in this vicinity and it may be that this settlement should be so identified.

## THE HOUSES.

### ARCHITECTURE.

The houses uncovered on Vrokastro show a minimum of architectural skill. In both groups, that excavated in 1910 and that in 1912, there were few rooms which were either sufficiently regular in shape or large enough to constitute a dwelling-room that by modern civilized standards would be considered endurable. The reason is not far to seek. To erect symmetrical and spacious houses on Vrokastro would have involved an elaborate series of terraces that would have imposed a vast expenditure of time and labor on the most skilled builders. And the people of the iron age were not under favorable circumstances skilled builders. Some of the houses unearthed by Mrs. Hawes at Kavousi are, it is true, solidly and regularly constructed and the building found near the bone-enclosures on Karakovilia seems also to imply better methods, but in general it may be said that this people to an even greater extent than their predecessors of the bronze age were content to live in small and poorly constructed rooms.

Of the group of houses excavated in 1912, no plan was attempted. An amateur plan of that uncovered in 1910 is shown in Pl. XVIII. No elevation of the site was drawn, but the photograph of Pl. XXII shows the chief variations in level. The letters on the photograph refer to those on the plan.

The walls of Vrokastro are built of small stones with no other binding material than clay or mud daub. No bricks or squared stones appeared. Dressed stones, however, were

found in the building on Karakovilia. In several rooms upright faces of native rock served as a wall. In such cases they were faced with rubble masonry which was remarkably well preserved. This method of building can be paralleled in modern Cretan villages; in Kritsa the face of the steep rock against which the houses are built makes the fourth wall in more than one room.

Only one road about which there can be no dispute was found. It is marked 2 on the plan, and probably led to the saddle connecting with the hills to the south. Beside it was a drain built of small stones like those beside roads in Pseira. It is possible that 24 and 26 were also originally roads and that the walls of small stones built across them are of later origin.

There being thus no roads to divide the houses into blocks, it becomes quite impossible to distinguish separate houses. In all probability the houses were built, like those on Pseira, in successive terraces, the part of the house on any one terrace not exceeding two stories in height.<sup>1</sup> One well-preserved staircase is shown in Pl. XXIII, 3.

Some of the walls do not enclose rooms at all, but merely shut off the rocks where these emerge above the surface. Rooms 17 and 19, *e. g.*, are both more regular in plan for the intervening rocks having been cut off by walls. This method was, of course, easier than to remove the outcropping rock. Where irregular surfaces of rock were lower than the floor to be built, a process of leveling up was employed. The soil used to fill up such holes and crevices was of a reddish color, easily distinguishable from the brown soil of neighboring rooms. It contained a large admixture of sherds of the type characteristic of the

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<sup>1</sup> R. B. Seager, *University of Pennsylvania, The Museum, Anthropological Publications*, Vol. III, No. 1, *Excavations on the Island of Pseira, Crete*, p. 13.

very end of the bronze age, that to which the name Late Minoan III b has been given.<sup>1</sup> The extremely uneven character of the rock as it appeared at the bottom of one room when entirely cleared, is shown in Pl. XXIII, 1.

The floors of the houses were made of trodden earth. Column bases occurred in three rooms. In Room 34 a rec-



Fig. 47. Sketch of Room 34, from Northeast, showing Rectangular Column Basis above Rectangular Stone.

tangular column base was found, set upon another rectangular stone as foundation and for the purpose of raising the column base to the level of the native rock at the other end of the room, Fig. 47. The sherds found at the level of this lower stone were of the Late Minoan III period. The only object found above the floor was a large pithos of geometric date.

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<sup>1</sup> Cf. Dawkins, *B. S. A.* X, p. 196.

## STRATIFICATION.

The rubble walls of the Vrokastro houses were of little service in determining the periods in which the site was occupied. Occasionally it was possible to speak with certainty about the relative dates of juxtaposed walls, for a later wall was seen to be carried over an earlier. But usually there was no such criterion, nor were there any differences of construction observable, so that the determination of chronological periods was necessarily based on pottery. In connection with the subject of stratification, it will be convenient to describe the types of sherds yielded by the site.

The general rule for the stratification of Vrokastro was to find geometric or quasi-geometric sherds in the upper stratum, below these Late Minoan III sherds with occasionally Middle Minoan fragments at a still lower level. Neither remnants of pavements nor signs of trodden earth floors were detected to distinguish these various strata. The level of a floor could be inferred only from the unusual amount of pottery or from the presence of unbroken specimens. Not a single floor-level of the Late Minoan III period was so indicated. In the uppermost stratum the level of a geometric floor could frequently be fixed, and, in the lowest stratum, that of a Middle Minoan floor. In rooms like 26 and 27, where Middle Minoan vases were found nearly intact, it must be supposed that their owners had left them in the corners of the rooms, that they had become covered with dust and débris in the interval which elapsed before the occupation of the site in the Late Minoan III period and that they then became further buried in artificial fillings inserted to level up the uneven surface of these rooms. The greater part of the Mycenæan pottery came from such fillings.

These early deposits had sometimes been disturbed. In three cases Late Minoan III sherds were seen to overlie sherds of the geometric period. Such confusion was doubtless mainly due to the character of the site; in rooms built on sharply sloping ground material packed beneath floors, when once it came to be exposed to rains, would be carried down the hill and lodged against the lower wall of the room. This was precisely what happened in Room 17. In view, moreover, of the long period during which this site was occupied, it is natural to suppose that in antiquity some of these deposits beneath floors had been overturned in the process of rebuilding and of leveling up anew the very uneven surface of the hill.

Typical stratification was found in Room 27, where as usual the earth was stripped off a half meter at a time. In the first half meter was found geometric ware, principally bowls decorated with meanders, a few Late Minoan III sherds, the lamp of Fig. 57 d, and pieces of a small animal figure comparable to those in Fig. 56; in the second half meter, the Late Minoan III fragments were more numerous and with them began to appear Middle Minoan ware, notably fragments of cups and of larger vessels decorated with circular patches of dark paint connected with slanting lines; in the lowest half meter were a few Middle Minoan vases and a single sherd of Late Minoan III ware. Certain fillings were found to contain only Late Minoan III sherds; in Room 17, where a late wall had cut off a rectangular space, the earth within this space was found to contain nothing but Late Minoan III fragments, indicating that the later north wall of this room had been built at a time when sherds of this period were at hand for filling material. Similarly, in a room dug in 1912 which contained a pocket 2.50 deep, the red earth with which this hole had been

filled contained Late Minoan 'III sherds with a single piece dating from the Middle Minoan I period.

The quantity of sherds yielded by the town-site was large, the harvest of a day's digging amounting oftentimes to thirty baskets. Over fifty per cent of these were unpainted, coming either from large pithoi or from smaller unpainted jars. The pithoi were decorated with a variety of stamped and moulded patterns shown in Fig. 48. Of the painted fabrics at least ninety per cent were of the geometric style. The rest were Minoan.

Sherds of typical Vrokastro fabrics are shown in Figs. 49-53.



Fig. 48. Fragments of Pithoi with Stamped Ornaments from the Town (1 : 5).

Middle Minoan sherds are not here included, but illustrations of restored pieces of this period are shown in Figs. 64 and 66 and Pl. XXV, 1. The most common type of Middle Minoan I sherd is that already referred to, from a dark on light fabric decorated with circular patches of paint connected with slanting lines.<sup>1</sup> On Fig. 49 are shown typical sherds of a ware dating from the end of the bronze age. It will be seen at a glance that they are more Mycenæan than Minoan. Not once occurs the foliate pattern characteristic of the later stages of Knossian

<sup>1</sup> *University Museum, Anthropological Publications*, Vol. III, p. 19, Fig. 4, and p. 60, Fig. 32.



ceramic art.<sup>1</sup> Instead are found the conventionalized buds, the stereotyped renderings of marine life, so familiar from the mainland.<sup>2</sup> Many of these fragments, notably B, D, F, and I,



Fig. 49. Late Mycenaean Sherds from Town (1 : 2).

seem to be actual importations from the mainland; their good slip, finely polished surface, and lustrous paint suggest Furt-

<sup>1</sup> Evans, *Prehistoric Tombs of Knossos*, p. 120, Fig. 114, 55d.

<sup>2</sup> Cf. e.g. Furtwängler and Löschcke, *Mykenische Vasen*, Pl. IV, 27b XII; Pl. VI, 31 XII; and Pl. XXXIV, 342.

wängler and Löschcke's third style. Other pieces, like A with its muddled, senseless design, might equally well be a native product. Such pieces are analogous to the vases of the period of final abandonment at Palaikastro and the period of reoccupation at Gournia. Precisely the same type of pottery was found at Phylakopi, associated with the Mycenæan palace but coming from the very end of this palace period.<sup>1</sup>

The history of the main settlement on Vrokastro begins, therefore, in a period slightly posterior to that of the Zafer Papoura cemetery and contemporary with the end of the Mycenæan period at Phylakopi; or, in other words, in the period of the "widest diffusion" of Mycenæan art.

That this last phase of the art of the bronze age stands in the closest relation to that of the succeeding age of iron has been abundantly shown.<sup>2</sup> The excavations at Vrokastro evince fresh proof of this. From its output of sherds a series might be arranged which would show the gradual transition from the Late Minoan III or, more properly, the late Mycenæan style to the geometric style. In the matter of design the distinction is particularly hard to draw; the sherd on Fig. 50 H might be called either Mycenæan or geometric. In technique, however, the difference is more easily apparent and serves as the best means of distinguishing the two wares. The fine hard slip, the polished surface, and lustrous paint of the imported pieces and the native imitations of this technique are unknown in the geometric period, when a more porous clay was used which absorbed the thin paint of the design.

In Figs. 50-52 are shown typical sherds of the Vrokastrian geometric style. The stratification of the town site

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<sup>1</sup> Phylakopi, Pl. XXXII, 1-10.

<sup>2</sup> Wide, *Jahrbuch*, 1899, pp. 35-43.

indicated no chronological distinction between the quasi-geometric style of Figs. 50 and 51 and the fully developed style



Fig. 50. Sherds of the Quasi-Geometric Style from the Town (1 : 2).

of the sherds shown in Fig. 52. Vases of both styles were found above floor levels. Luckily the tombs supplanted here the evidence of the houses and showed that a line of demarcation

might be drawn between the two styles. The patterns peculiarly distinctive of the earlier quasi-geometric style are: triangles filled in solidly with black as in Fig. 50 E and Fig. 51 K;



Fig. 51. Sherds of the Quasi-Geometric Style from the Town (1 : 2).

upright ornaments filled in solidly with black and bounded on one side by a straight line, on the other by a curved, Fig. 50 A and Fig. 51 K, and edged frequently with a fringe of parallel

lines;<sup>1</sup> and circles in every form. The circles are mathematically exact and are drawn with compasses; the larger circles are frequently embellished with triangles and checkers. In this early stage of the geometric style, many curvilinear motives familiar in earlier decoration still persist.



Fig. 52. Sherds of the Mature Geometric Style from the Town (4 : 9).

As the Mycenæan tradition weakened and foreign models were more frequently seen, the meander or partial meander became favorite motives, Figs. 51 E and 52 C, D, and E.

<sup>1</sup> This pattern occurs on a fragment from the Acropolis. Graef, *Akropolis Vasen*, Taf. 9, 273. Cf. also Schliemann, *Tiryns*, p. 133, No. 47.

This pattern is generally associated with a compact and mathematical arrangement of the ornament. In this developed geometric style appear birds, human beings, and other motives characteristic of geometric vases elsewhere.

The last phase of Vrokastrian ceramic art is represented by a group of sherds in Fig. 53. They were found in three different rooms but seem to come, with one exception, from a single vase. The clay is pale green and covered with a buff slip; the interior is entirely covered with a fine lustrous black paint that recalls the fine black paint on the better class of Dipylon ware. Fragments from the rim indicate that it was decorated with a row of squat birds, their wings represented by fringed lines. The main field is divided into zones and filled with representations of chariots and warriors armed with helmets, shields, and swords. According to the cursory method of the geometric style of drawing, the close-fitting cap of the helmet does not appear.<sup>1</sup> The long conspicuous crest was evidently regarded as sufficient to indicate the entire helmet. The shields are of the usual type, flaring at top and bottom and cut away in the center, a type which, according to Reichel, was superseded about the middle of the eighth century.<sup>2</sup> The swords may be compared to those on a vase in Copenhagen.<sup>3</sup> The chariots, as nearly as can be judged from these fragments, were drawn in a highly schematized manner, the floor of the chariot being entirely severed from the wheels. These seem to have had four spokes.<sup>4</sup> The stop-gap ornaments of these sherds are characteristic of the fully developed Dipylon style.

The sherd in Fig. 53 E is in technique quite similar to the

<sup>1</sup> Cf. Reichel, *Homerische Waffen*, pp. 109 and 110, Figs. 51 and 52.

<sup>2</sup> Reichel, *op. cit.*, p. 48, Fig. 25; *Jahrbuch*, 1899, p. 85, Fig. 44; and *Arch. Zeit.*, 1885, Pl. 8.

<sup>3</sup> *Arch. Zeit.*, 1885, Pl. 8.

<sup>4</sup> Cf. Reichel, *op. cit.*, pp. 124-125, Figs. 64-67.

fragments just described. The panel to the right of the quatre-foil ornament was decorated with a bird.

The clay of these fragments was, as was stated, of a



Fig. 53. Latest Type of Sherds from the Town. All but E from One Vase (1 : 2).

greenish color. That of the others in Figs. 50-52 shades in color from buff to pink. It is coarse and gritty and is rarely covered with a slip. The paint varies in color from brown to

black. White is also frequently used for the design—a peculiarity often noted of Cretan geometric vases and generally attributed to Minoan tradition.

#### OBJECTS FOUND.

The objects found in 1910 at Vrokastro, arranged according to the rooms in which they occurred, will now be described. The rooms, the numbers of which do not appear in the following lists, yielded nothing but potsherds.

#### ROOM 6.

Amphora, Fig. 54. The pieces of this vase were found in the southeast corner of the room, some of them under a collapsed wall. The vase was doubtless left in the corner of the room at the time of the abandonment of the site. It is made of buff clay; the exterior, from a line on the shoulder to the base, is covered with black paint except for a reserved panel between the handles, which is ornamented with zigzag lines and a row of herring-bone pattern. The shape of the vase, the type of double handle,<sup>1</sup> and the reserved panel indicate a fully developed geometric style.

The sherds that lay below the floor level of this room, which was in this case indicated by a column base, were principally of the late Mycenæan style.

#### ROOM 8.

1. Bronze fibula, Pl. XIX b, asymmetrical, an arm having been introduced to include thick folds of drapery, but developed beyond doubt from the fiddle-bow type of fibula. A similar fibula was found in Tomb 38 at Enkomi, Cyprus.<sup>2</sup>

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<sup>1</sup> This type of handle has also an earlier history, Mackenzie, *loc. cit.*, p. 433.

<sup>2</sup> Murray, *Excavations at Cyprus*, p. 51 and Fig. 27.



2. Bronze disk, .03 m. diam., ornamented with two perforations and with a circle of punctuated dots. This disk lay with the fibula in the upper stratum of deposit. At the same level further to the east were parts of three animal figures like those in Fig. 56, a triton shell, and bones of animals.



Fig. 54. Amphora from Upper Stratum of Room 6 (1 : 7).

3. Parts of three badly corroded iron blades. These lay at the south end of the room together with the following.

4. Round-bodied pithos, ht. .645, whole except for a break at the rim.

5. Fragment of a fibula similar in type to that in Pl. XX B.

## ROOM 9.

1. Clay face, Fig. 55 B, broken around the edges, from an image mounted on a cylindrical base like that of Fig. 55 A. Paint is applied to the chin, mouth, eyes, and nose.

2. Large round-bodied pithos with rope pattern around the rim.

3. Unpainted flaring bowl like that of Fig. 92.

4. Horns of an agrimi.



Fig. 55. A, Clay Figurine from Room 17; B, Face of Similar Figurine from Room 9 (1 : 3).

## ROOM 11.

Whether this room was reached by a passageway to the west of

Rooms 9 and 10 is uncertain, for the walls here were in a ruined condition. At the south end of room is a large boulder. A few feet from the boulder against the east wall of Room 11 were found the objects enumerated below.

1. Terra cotta head of horse, Fig. 56 A, with bridle in painted relief. The bridle is like a modern one, except that it has no strap under the throat. The eyes, mouth, and forelock, as well as the bridle, are painted.

2. Horse's head, Fig. 56 B, which had served, it seems, as handle for a lid. Cf. *Mon. Ant.* VI, Pl. XII, 62.

3. Head, body, and one foot of the horse shown in Fig. 56 F. The other pieces were recovered in Room 17.

4. Unpainted flask, with one handle, and slight central protuberances, Fig. 57 E.

5. Lid with painted rays from the central knob to the rim.

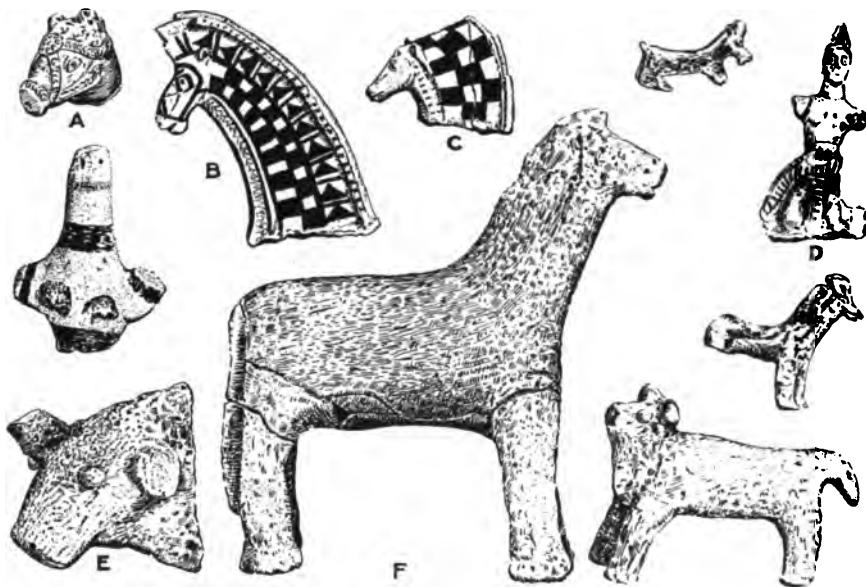


Fig. 56. Clay Figurines from the Town (1 : 8).

6. Bronze disk .093 m. diam., ornamented with a central boss and row of punctuated dots around the rim, Fig. 58 H. There are four perforations in the part preserved and there must have been five originally, one in the center and four around the circumference. Similar objects were found in the Psychro Cave and called tentatively by Mr. Hogarth miniature shields.<sup>1</sup>

<sup>1</sup> *B. S. A.*, VI, p. 109, Fig. 41.

In Tomb B at Mouliana, Mr. Xanthoudides found similar but larger disks and connected them with the votive cymbals found at Olympia.<sup>1</sup>

7. Spear-end of hammered bronze, Fig. 59 D. The ferrule is made by means of two cross cuttings at the shoulders, the piece cut away being then bent and hammered around the shaft.<sup>2</sup>

8. Spear-end of hammered bronze, Fig. 59 F. In this specimen the transition from shoulder to ferrule is gradual; the

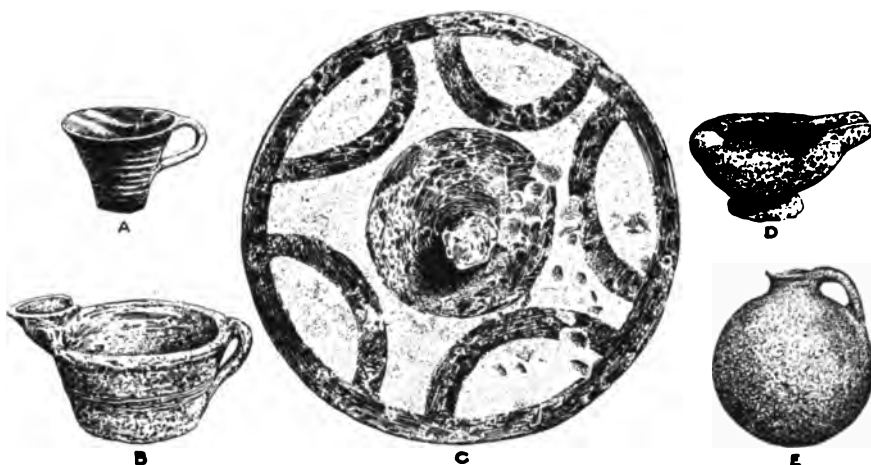


Fig. 57. Minoan (A, C, and D) and Geometric Pottery from the Town (1 : 6).

bronze of the blade is bent without cutting and hammered around the shaft.

9. Spear-end of hammered bronze, similar to the foregoing but larger, Fig. 59 C.

10. Spear-end of cast bronze welded to iron shaft, Fig. 59 B. This specimen is of good lanceolate shape with a slight mid-

<sup>1</sup> 'Εφ. 'Αρχ. 1904, p. 45, Fig. 11; *Olympia Tafelband* IV, Pl. XXVI, 517. See also Daremberg and Saglio, s. v. *cymbala*, and Arch. Anz., 1913, pp. 47-53.

<sup>2</sup> For a similar type, cf. Carapanos, *Dodona*, Pl. LVII, 8.

rib; the piece of iron to which it is welded is broken at the further end and has a slightly greater diameter at this end

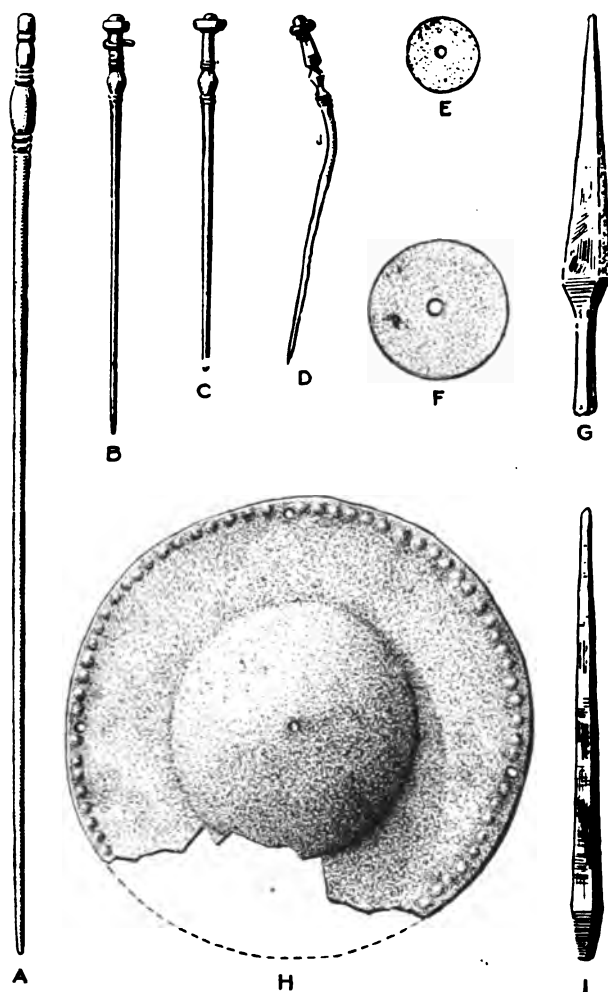


Fig. 58. Miscellaneous Bronze Objects from Town and Tombs (2 : 3).

than where it is joined to the spear-point. This seems to indicate that the entire shaft was made of iron.

11. Spear-end of cast bronze, Fig. 59 A, tip slightly broken.

The type is similar to that of the preceding, except that the blade is much longer and the transition from blade to shaft

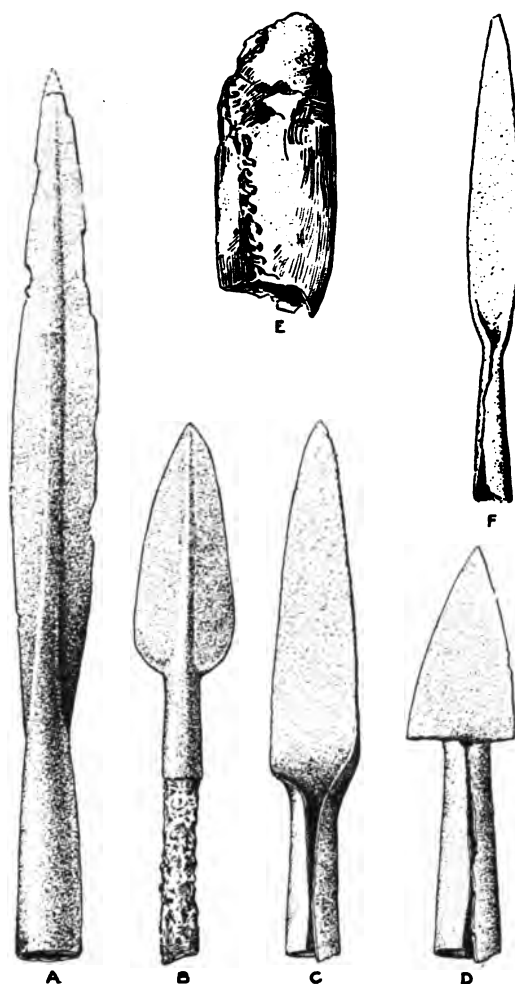


Fig. 59. Spear-ends from Room 11 and (E) Remains of Wooden Handle with Coating of Thin Bronze Sewn with Linen Thread (1 : 2).

more gradual. A similar spear-end was found in the graves of Mycenæ.<sup>1</sup> These five bronze spear-ends lay close together

<sup>1</sup> Εφ. Ἀρχ., 1888, Pl. 9, 26.

under the east wall of the room. Together with them were the rotted remains of two iron spear-ends.

### ROOM 12.

In the northeast corner of this room, where the rock sloped sharply away, was a pithos containing the skull and bones of a child. It was inserted below the level of the floor and was not inverted. Inside the jar and just below the flat stone that



Fig. 60. Vases from the Town (1 : 7).

covered it was the cup of Fig. 60 B. It is decorated with horizontal bands and with groups of vertical lines straight and waved, on the shoulder.

The practice of burying children in jars was usual both in the bronze age and in the succeeding age of iron.<sup>1</sup> In the bronze age adults also were buried under inverted jars, so that the phenomenon is not then so striking as in the later period, when the bodies of adults were disposed of by quite different

<sup>1</sup> See *Spboungaras*, p. 73; Philios, 'Εφ. 'Αρχ., 1889, p. 186; Poulsen, *Die Dipylongräber und die Dipylonvasen*, pp. 23-25; Dragendorff, *Tbera*, II, p. 84.

methods. The place of burial is also in this case significant; the interment is made not in a cemetery but within the walls of a house. A parallel to this custom may now be adduced from the bronze age, for in recent excavations at Phylakopi on Melos, Mr. R. M. Dawkins found intra-mural burials which date from the closing period of the first city.

From this room came also the krater of Fig. 61. The lower part of the vase is, save for the foot, unpainted. The



Fig. 61. Krater in the Quasi-Geometric Style from Room 12 (1 : 5).

upper part is painted black with a reserved panel between the shoulders, which is filled with two groups of concentric circles embellished with dots and by a central ornament made up of a parallelogram and triangles.

### ROOM 13.

In the upper stratum of this room were found the following objects.

1. Bowl, Fig. 60 A. This shape is one of the commonest



found on Vrokastro; its prototype appears in the Late Minoan III b period.<sup>1</sup> The handles are horizontal and are placed high on the shoulder. The decoration of the reserved panel consists of a series of cross-hatched lozenges.

2. Bronze fibula, Pl. XIX, 1. The thinner part of this specimen is broken; whether it belonged to the clasp or to a flat ornament in the center of a symmetrical fibula is uncertain.

3. Bronze pin, Fig. 58 C. This type corresponds closely to those found in the tombs (*ibid.* B and D).

4. Slender bronze needle.

5. Similar needle of bone.

#### ROOM 17.

This was one of the rooms in which the deposits of pottery had been overturned. Few sherds were found near the east wall; near the west wall, whither the rains had carried them, were fragments of geometric pottery underlying typical Late Minoan III pieces. At the south end of the room under a flimsy wall indicated by dotted lines on the plan were the objects enumerated below.

1. Clay head on columnar basis, Fig. 55 A. The workmanship is crude. A reddish paint is applied profusely to the hair, lips, eyes, and forehead. The long curls, which are plastically rendered, extended once to the bottom of the base, which is further adorned with a panel of geometric ornament.

2. Fragments of figurines of animals, including several pieces of the horse of Fig. 56 F, the legs and other parts of a similar figurine, the head of a sheep, Fig. 56 E. With these were the horns of an agrimi and a triton shell, the invariable accompaniment of figurines on Vrokastro. They indicate a shrine,

<sup>1</sup> B. S. A., IX, p. 319, Fig. 19.

and in view of the fact that pieces of the same figure were recovered from different rooms, it seems likely that they come from a single shrine, the offerings at which had been thrown out into neighboring areas.

3. Fragment of heavy bar of iron, rectangular in section.<sup>1</sup>
4. Glass bead.
5. Fragment of iron blade.

#### ROOM 20.

The principal object found in this room was the bowl of Fig. 60 D. It is made of coarse, porous clay and is decorated with a simple meander painted in dull black. This bowl was found in the uppermost stratum and dates accordingly from the last period of the Vrokastro settlement. Immediately below the floor level marked by this vase were Late Mycenæan fragments, one of which is shown in Fig. 49 G; this juxtaposition of L. M. III b and geometric types may indicate that the intervening period of quasi-geometric art was short.

#### ROOM 21.

Three cups with broken bases from a kernos. Compare *B. S. A.* XII, p. 16, Figs. 3 and 4.

#### ROOM 22.

From the uppermost stratum of this room came most of the pieces of the bowl shown in Pl. XXVI. The others were found in Room 24. The clay of which this vase is made differs widely from that of the other Vrokastro specimens. It is fine and hard and its color is a dark, reddish brown. The shape,

<sup>1</sup> Cf. Körte, *Gordion*, in *Ergänzungsband V of Jahrbuch*, p. 79, abb. 69 b.

a large shallow pyxis, is a familiar type in the geometric period.<sup>1</sup> The lid, of which a single fragment only was recovered, was doubtless surmounted by a high handle. The decoration is applied in the compact and mathematical manner of the fully developed style of the mainland. The separate motives, especially the swastika, indicate the same period. Because of the clay and of the character of the ornament, this vase must be regarded as an importation. The sherds in the two rooms where the pieces of this vase were found were of the typical Vrokastro geometric style analogous to the vase of Fig. 60 D. We may infer, therefore, that the compact style of the mainland was contemporary with the open geometric style of Crete.

#### Room 24.

In the upper stratum of this room were found the following objects.

1. Clay scoop, ht. .07 cm. The handle of this specimen serves also as a means of support.<sup>2</sup>
2. Two-handled bowl with cup-like spout, Fig. 57 B.<sup>3</sup>
3. Lid with moulded decoration about the rim.
4. Unpainted clay dish of the shape of the vase in Fig. 60 D containing a light spongy brown mass which proved on chemical analysis to be a mixture of iron, lime, and silica with a small amount of aluminum. The iron was present in the form of limonite, lime in the form of calcite, and the silica in the form of sand composed of grains of quartz. Apparently, this was a charge for smelting, the sand having been added as a flux.

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<sup>1</sup> Cf. e.g. 'Εφ. 'Αρχ., 1898, Pl. IV, 6.

<sup>2</sup> For a similar type see Xanthoudides, 'Εφ. 'Αρχ., 1904, p. 18, Fig. 2, and Hogarth, *B. S. A.* VI, p. 105.

<sup>3</sup> Cf. Wace and Thompson, *Prehistoric Thessaly*, p. 211, Fig. 146 c.

## ROOM 25.

In a mass of débris thrown into a deep pocket in this room was found the crude model of a horse and chariot shown in Fig. 62, an imitation probably of Cypriote models.

## ROOM 26.

Two well-marked deposits dating the one from the geometric, the other from the Middle Minoan period were found in this room. The level of the upper deposit was marked by the presence of whole vases. The following objects were found.

1. Jar with panel of meander ornament, Fig. 60 C. The upper part of this vase is covered with dark paint except for a reversed panel on either shoulder on which is painted a partial meander.

2. Two clay weights in the shape of truncated pyramids.<sup>1</sup>

3. Head of clay figurine, Fig. 63. The lower surface shows a broken edge, the outline of which indicates that the head was once mounted on a columnar basis like that of Fig. 55 A. The face was originally covered with a slip which has been chipped off from the cheeks and along the outer edge, leaving a coarser red clay exposed beneath. The eyebrows, eyelashes, lips and chin show traces of red paint; a protruding bit of clay on the right cheek is the only remnant of the moulded curls which once bordered the face. The expression of the face achieves



Fig. 62. Crude Model of Chariot and Charioteer from Room 25 (5 : 8).

<sup>1</sup> Cf. Doerpfeld, *Troia und Ilion*, p. 410, Fig. 416.

in this figure something akin to dignity and reveals far higher skill in the koroplastic art than do other figurines from the site.

4. Symmetrical beaded fibula, Pl. XX B. This fibula is of the same type as those from the bone-enclosures discussed below on p. 84.

5. Two bronze disks with central perforations, probably used as pendants, Fig. 58 E and F.<sup>1</sup>

6. In the lower deposit of this room above a floor of trodden earth were found the pieces of the jar in Fig. 64. It is wheel



Fig. 63. Head of Clay Figurine from Upper Stratum of Room 26 (1 : 2).

made and the clay is coarse, but because of its shape, its simple curvilinear ornament and the position where it was found, it must be assigned to the Middle Minoan period.

7. In the lower level of this room but unassociated with Minoan sherds was a child-burial in a jar. It was found in the southwest corner and belongs doubtless to the geometric period.

<sup>1</sup> Cf. *Argive Heraeum* II, Pl. XCIX; *British Museum Catalog of Terra-cottas*, Pl. XIV; *Mon. Ant.* VII, 239 and 241, Figs. 31 and 32.

## Room 27.

The stratification of this room has already been described and mention has been made of the lamp of Fig. 57 D from the uppermost stratum. At a level only slightly lower than this lamp and at a distance of only a few centimeters from Late Minoan III b sherds was found a fibula of fiddle-bow type.



Fig. 64. Middle Minoan Jar from Lowest Stratum, Room 26 (1 : 6).

Pl. XIX A. This is the only fibula of this type that came to light in either town or tombs. It is generally held to be the oldest type of fibula known to the Mediterranean area; it was found in Tomb No. 8 of the lower town at Mycenæ.<sup>1</sup> It belongs accordingly to the Late Minoan III period. The fact that this fibula did not occur in the Zafer Papoura cemetery confirms the

<sup>1</sup> Εφ. Ἀρχ., 1888, Pl. 9, 1 and 2.

statement of p. 19, that Vrokastro takes up the tale of Cretan ceramic history where the Knossian cemetery leaves off.

The following Middle Minoan specimens were recovered from this room.

1. Cup, .07 cm. high, .096 m. diam., of brown clay, Fig. 57 A. The inside is entirely covered with brownish black paint, and is further decorated with white festoons. The outside has a broad band about the rim and another about the base. Traces remain of narrower stripes which encircled the body of the vase.

2. Jug, Pl. XXV, 1, part of spout missing. The entire surface of the vase is covered with a metallic black paint over which are splashes of white. The decoration, which presents a new phase of Minoan ornament, seems to imitate the surface of a breccia vase.

#### Room 30.

Veined marble bowl, ht. .05 m., diam. of mouth .046 m. As in the case of the other stone vases from Vrokastro, only a small piece of stone has been removed from the center, so that a thick wall is left. This method is characteristic of the decadent period of stone-cutting and stands in marked contrast to the skillful cutting of the delicate Early Minoan stone vases.

2. Fragments of a steatite cup.

3. Clay seal with rosette on the sealing surface, Fig. 65.

#### Room 36.

In the upper stratum, a veined marble bowl was found, ht. .04 m., diam. of mouth .042 m.

Near the number 36 on the plan where a wall runs at right angles to the escarpment of the rock, earth and fragments of pottery were noticed beneath the wall. The stones of the wall

were accordingly removed and the following Middle Minoan pieces brought to light.

1. Part of cup, Fig. 66 A, decorated with white spirals interspersed with leaves.

2. Low, straight-sided cup, ht. .054, diam. of mouth, .082, decorated with heart-shaped motives embellished within with leaves, two of which are red and two white. The same design is also applied to the base of the cup, the interstices of the pattern being here filled with triangles.

3. Cup of similar shape, Fig. 66 B. The restoration of the design is possible from the fragments preserved; it consists of clusters of loops connected with slanting lines. A similar ornament decorates the base.

4. Lid, Fig. 57 C, with central knob and decoration of loops.

5. Small jug with incised ornament, Fig. 67. This vase is the exact counterpart of vases found at Chamaizi (Χαμαίλι), and published in 'Εφ. 'Αρχ., 1906, Pl. 9, 1, 2, and 3. It belongs to the Early Minoan II period and is the only specimen from Vrokastro which can be assigned to so early an epoch. The other vases from beneath this wall were associated with sherds characteristic of the Middle Minoan I period.

Just east of 36, on the limit of the plan, was found a small bronze saw like those found in the tombs. Further to the southeast near the crest of the hill where the soil was shallowest the workmen were in the habit of gathering for their noonday recess. They one day noticed that the inch or so of soil which here remained was packed with chips and filings of bronze. Evidently a smithy had been located here. Among the hundreds of bits found was a conical piece terminating in a hook. The

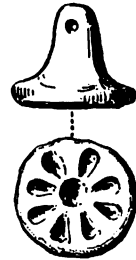


Fig. 65.  
(2 : 3.)



workmen at once recognized it as the tip end of a distaff, the piece which holds the wool. Similar distaff ends were found by Mr. Hogarth in the Psychro Cave.<sup>1</sup>

The group of houses which was unearthed in 1912 yielded less than that dug in 1910. The sherds were numerous, but unbroken pieces or such as could be restored were few. No Minoan sherds were found except in fillings. Ordinarily there was only one stratum to be taken into account, that of the geometric period. Of the objects now to be enumerated from

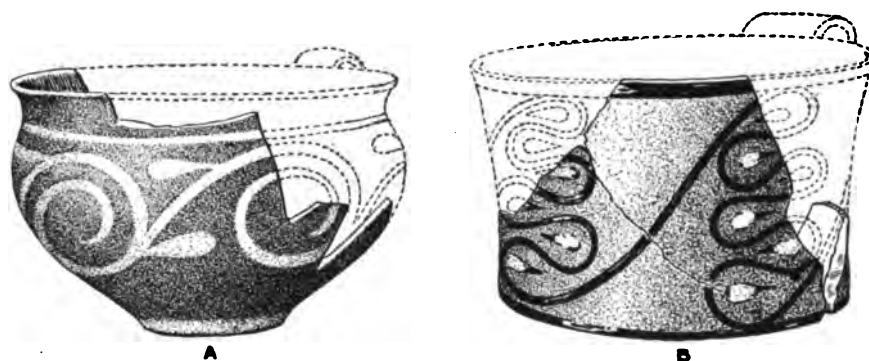


Fig. 66. Middle Minoan Cups from beneath Wall of Room 36 (2 : 3).

these houses, no two came from the same room. They will therefore be listed without regard to their finding-place.

1. Bowl of a type frequently represented by the sherds, Fig. 68 B, the handles and other pieces missing. The coarse, gritty clay has a buff color. The interior, both at the base and around the rim, has been daubed with reddish paint. Of the outside the lower half is also covered with the same. On the shoulder vertical lines divide the reserved space into two panels each decorated with a row of quirks.

2. Similar bowl, Fig. 68 C. The rim is painted within as

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<sup>1</sup> B. S. A. VI, p. 112, Fig. 46.

well as without. The interior is further decorated with a horizontal band about the shoulders. On the outside the lower part is left undecorated; the upper part shows the usual panel decoration, the ornament consisting here of a dotted network pattern.

3. Similar bowl, Fig. 69. The decoration which fills the panel is made up of straight lines, vertical and diagonal.

4. Jug with pour-handle and two low horizontal handles, Pl. XXVII, 3. The neck and a part of the pour-handle is missing. The clay is coarse and gritty and the decoration badly worn. This vase presents close analogies to that in Fig. 99 B, from Bone-enclosure VI, and serves accordingly to connect the houses with the later type of tomb.

5. Amphora, Pl. XXVIII, found in one of the upper corners of the room, the very uneven floor of which appears in Pl. XXIII. The shape is typical of the fully developed geometric style. The clay is slightly more reddish than that usual on Vrokastro, but the difference is not enough to warrant the inference that this is an imported piece. The decoration is confined to a small area of the vase. Broad and narrow horizontal stripes cover almost entirely the lower portion. A reserved panel on the neck is ornamented with a meander motive framed with lines. A second reserved panel on the shoulder is divided horizontally into three sections and filled with zigzags and dots. The handles are ornamented with linear patterns.



Fig. 67 (3:5).

6. As stated on p. 7, the walls on the north face of Vrokastro were several times tested for the purpose of ascertaining their date. At a distance of a hundred meters or so from the

houses dug in 1912, and half-way between these houses and the point where the north face of the mountain falls away in precipitous cliffs, a cave-like recess was examined. It contained the bowl of Pl. XXIX, 2. It was inverted and below it were traces of a few bones, unburned. It was doubtless a child-burial adjacent to houses on this part of the hill. The

clay is coarse and gritty, the paint a mere wash, and the decoration crude. Panels are reserved in the usual way on the shoulder and in them are painted groups of vertical lines; the intermediate spaces are cross-hatched. On either side of this decoration are curvilinear motives, the poor relic of Minoan naturalism.

7. In the hardpan, which served as floor at one end of a large room, a circular depression had been cut within which was found a bowl containing the bones of a small animal. These bones were sent to Professor Keller of Zürich, who kindly examined them for me and declared them to be those of a rodent, and not of a domesticated animal.

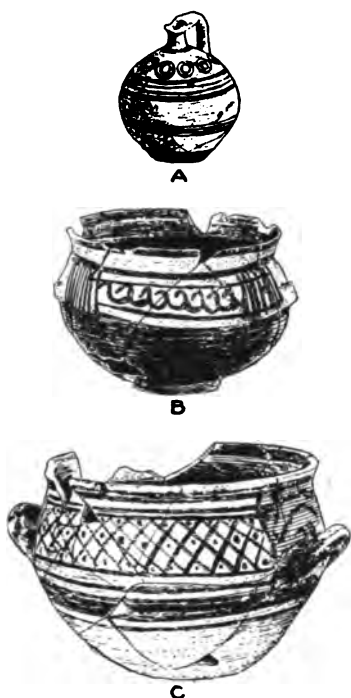


Fig. 68. A, Jug; B and C, Bowls  
(1 : 5).

8. After the discovery of the large chamber-tomb (p. 49) on Karakovilia, a search was made for more tombs in this vicinity. These were not found, but house-walls everywhere came to light. Most of these houses were blackened by fire. In one of them, that directly opposite the large chamber-tomb, was a cup which also was blackened by fire. It is made of

coarse, buff clay and is covered with black paint, save for one reserved panel opposite the handle, which is ornamented with a waved line and with a row of quirks between horizontal lines.

9. In an adjacent house south of the chamber-tomb, was found a low open dish of smooth, finely polished gray ware. The finish of the clay recalls Early Minoan II or even neolithic ware. The handles are pared into shape and contain perforations for attaching a lid. Together with the fragments of this vase were found those of a similar dish which showed a number of holes where it had been anciently mended. The rest of the

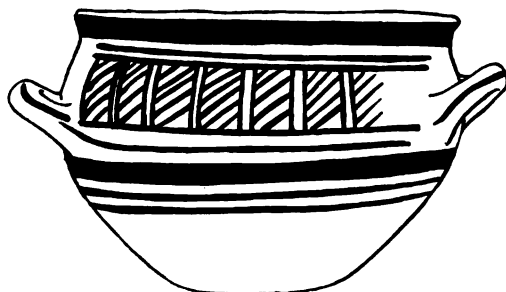


Fig. 69. Bowl from the Town.

sherds from this room were of ordinary geometric types. The entirely different character of the clay and the finish of these vases imply that they were either importations or heirlooms. A similarly shaped vase from Mirabello province is published by Mr. Droop in *B. S. A.*, XII, p. 38, Fig. 16. This specimen and the others cited in the discussion concerning it differ from ours in that their bases are decorated with a foliate ornament which is regarded by Mr. Droop as Minoan. It is not strikingly such, but it may at least be said that the decoration, like the clay and technique, must be regarded as either archaic or foreign. On the whole, this is a ware which might repay further investigation.

The objects other than pottery found in 1912 in the Vrokastro houses are as follows:

1. Four bronze rings, Fig. 70.
2. A quantity of small faience beads like the smallest beads shown in Pl. XXXV.

3. Sword of cast bronze, Pl. XXI G, the tip broken. The blade is adorned with three grooves. Two rivets are still in place and there is a hole for a third. This sword was found together with a clay disk like that in Fig. 83, and pieces of geometric bowls. In the same room were bones. It may be,

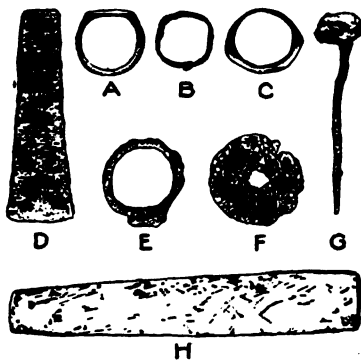


Fig. 70 (1 : 3).

accordingly, that we have here to do with a burial adjacent to a house. These objects were found in the upper level, so that they cannot represent a burial beneath the floor of a house.<sup>1</sup>

4. Bronze wedge, Fig. 70 D, from the room adjoining that in which the foregoing were found.

5. Implement of soft stone, probably a whetstone, Fig. 70 H. It is too light to have served as an instrument for cutting or as a chisel. Except for the lack of perforations it resembles the whetstone from Chamber-Tomb IV.

6. Bronze needle.

7. Bronze pin with large head, Fig. 70 G.

<sup>1</sup> Since going to press there has appeared in Vol. XVIII, p. 282, of the Annual of the British School at Athens an article by Mr. T. E. Peet in regard to similar sword-blades found in Egypt. One of these bears the cartouche of Seti II and dates from the last of the thirteenth century B. C. This date is considerably earlier than that to which the Vrokastro sword is assigned, but it is to be noted first, that the sword bearing the cartouche of Seti II is not certainly of the same type as that reproduced by Mr. Peet and secondly, that, as he himself suggests, it is a type that "may have been current for many years".

8. Bronze figurine with arms upraised, Fig. 71. This figurine is the only specimen of the kind found on Vrokastro: the position of the upraised arms is interesting because of its resemblance to the attitudes of Late Minoan terra-cotta figurines.

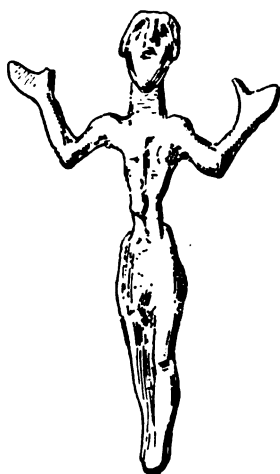


Fig. 71 (2 : 3).

9. Sealstone of steatite, Fig. 72, found near the surface. No sherds lay close at hand, but those at the same level some distance away were of the geometric period. The ornament on the sealing surface is a highly conventionalized squid.<sup>1</sup>

In enumerating the objects from the Vrokastro houses there should not be left out of account the humbler objects for domestic use. Among these were a saddle quern, several stone polishers, and whetstones of various shapes. The material for the latter was probably quarried at Elouda (Ἐλοῦντα), a place which today furnishes whetstones for the islanders. At a low level in one room a green steatite celt came to light, a survival of the Early Minoan period. Quadrangular blocks of stone containing a central depression were frequently noted; the workmen ventured the explanation that they had been used in spinning to support and keep in a constant position the end of the spindle. Whorls for spindles were also found. These are shown in Fig. 73, together with perforated pieces of steatite and clay beads which were evidently used as ornaments. These crude ornaments were indeed so numerous as to be one of the characteristic features of a geometric deposit,



Fig. 72  
(3 : 4).

<sup>1</sup> For Late Minoan seals in geometric surroundings, cf. *B. S. A.* VIII, p. 270.

and might well serve to identify any Cretan site of this period.<sup>1</sup> The oblong piece of steatite ornamented with dots and irregular lines was purchased of a man who found it on the lower slopes of Vrokastro.

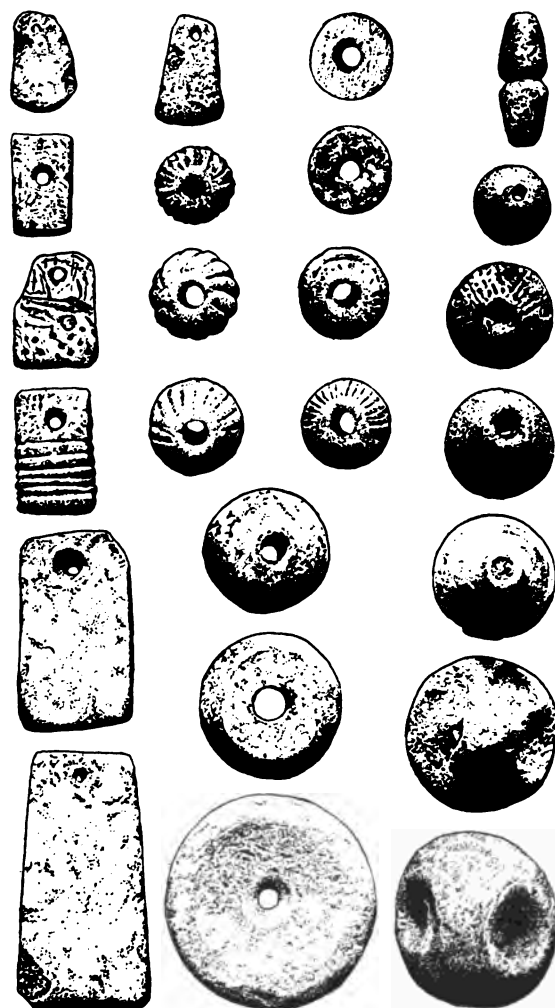


Fig. 73 Spindle-whorls and Ornaments of Clay and Steatite from the Town (1 : 2).

<sup>1</sup> Cf. *A. J. A.*, 1901, p. 282, Fig. 8.

## THE TOMBS.

In addition to the burials of children beneath the floors of houses, four types of interments were found in the vicinity of Vrokastro. They were: chamber-tombs (7), bone-enclosures (12), pithos-burials (4), and a single interment underneath an overhanging rock.

The chamber-tombs were sunk, as already stated, in the white chalky soil known as kouskoura, an exceedingly hard subsoil, and were lined with rubble masonry. In no case was a roof intact, but the uppermost course showed in several instances an inward projection. In Fig. 74 is shown a diagrammatic plan of Tomb I on Karakovilia, which, although it was both larger and more regularly constructed than the others, is yet typical. Details of construction will be given for each tomb.

### CHAMBER-TOMB I ON KARAKOVILIA.

The dimensions of this tomb may be seen from the diagram. Against the wall opposite the dromos was found a circular stone, in the neighborhood of which most of the bones and fragments of vases were found. It apparently had served as a table of offerings.<sup>1</sup> The disturbed condition of the tomb, however, does not warrant positive statements. It will be seen from the appended lists that thirty-three vases with many more cups were recovered from this tomb. Of these only four or five, those which had been inserted in other vases and two or three cups, were intact; the others had to be pieced

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<sup>1</sup> Cf. *B. S. A.* VI, p. 83.



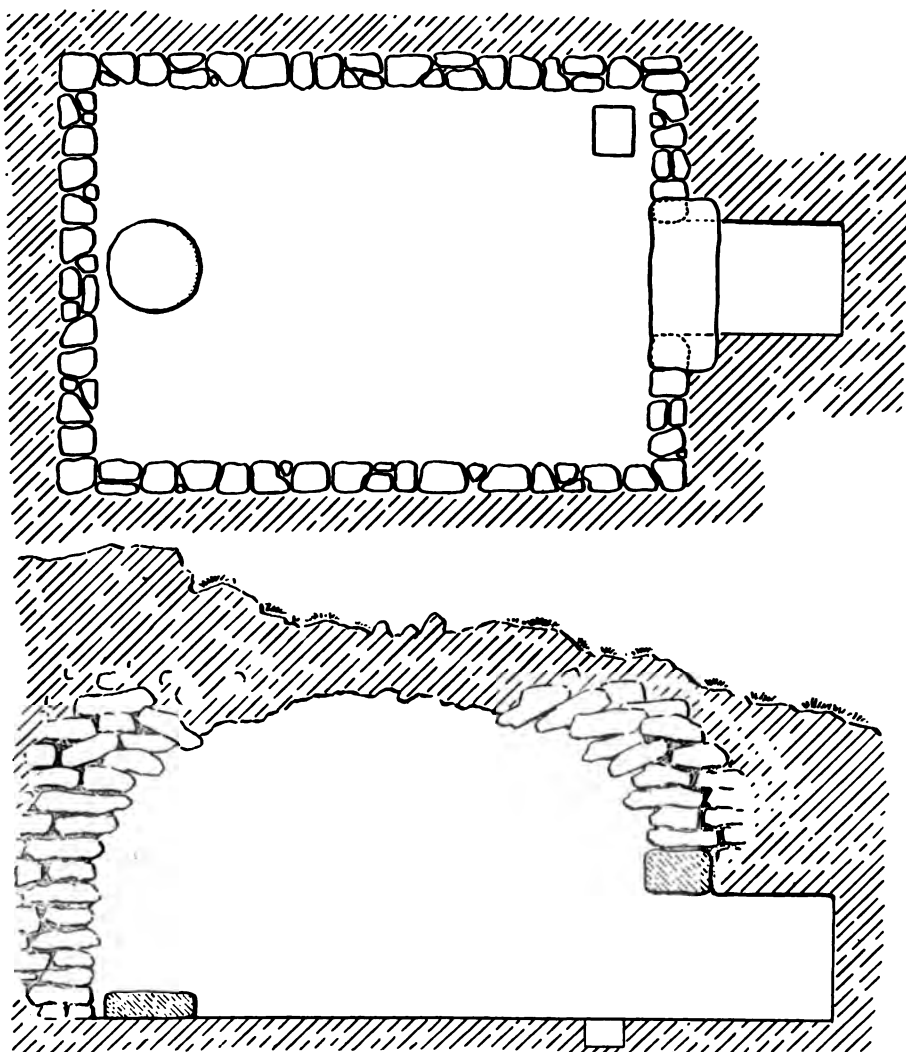


Fig. 74. Diagrammatic Plan and Section of Chamber Tomb No. 1.

METER.

together from countless fragments. As a result of heavy rains or of other natural processes, both bones and vase-fragments had worked their way through the soil to a considerable distance from their original position; some pieces of the vase of Pl. XXX were found at a height of .65 m. from the floor of the tomb, others on the floor itself. Pieces of the tripod of Fig. 80 were recovered from the four corners of the tomb. Almost all the pieces of the various objects found in the tomb were, however, eventually recovered.

The floor of the tomb had evidently been strewn with sand and river-pebbles, for these were found in abundance. In the northeast corner was a rectangular depression, .26 m. long, .22 m. broad, and .15 m. deep. Nothing but a few potsherds was found within it. It may have been used for libations.<sup>1</sup>

The bones recovered from this tomb were in a very fragmentary condition. Most of them showed indisputable traces of burning, some bits being actually burned to charcoal. In at least two cases the burned bones had been buried within jars.<sup>2</sup> In other cases the bones were interred outside jars; whether all of these had been burned or not was difficult to determine because of their rotted condition. They were found in a small heap, which indicates that the body was at least not stretched out to its full length. One child's skull was found which it was plain to see had not been burned; evidently the bodies of children who were buried within tombs were also an exception to the practice of cremation. It was estimated that at least six interments had been made within this tomb.

<sup>1</sup> A comparable pit was found in Tomb A at Moulana, *Ἐφ. Ἀρχ.*, 1904, p. 24, Fig. 5. It was, however, of a different shape.

<sup>2</sup> One of these jars is shown in Fig. 77; the other was a coarse, unpainted jar and is not shown.

The vases from this tomb are as follows.

1. Large straight-sided jar, Pl. XXX, of soft yellowish clay. The decoration, which is badly worn, is divided into narrow vertical panels which are filled with simple linear motives and

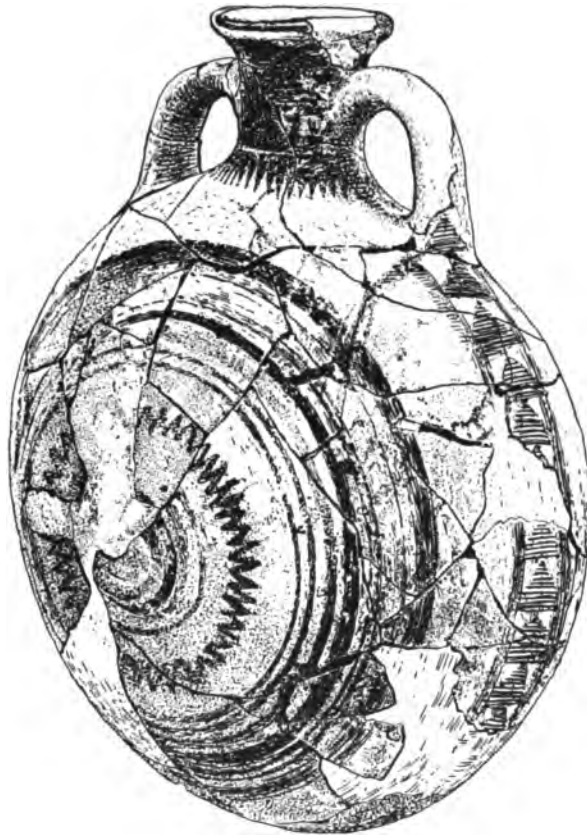


Fig. 75. Flask of the Quasi-Geometric Style from Chamber-Tomb I (1 : 4).

with the triangles characteristic of an early stage of Cretan geometric art.<sup>1</sup> The handles are curious; they are flat and are applied to the outer surface of the vase from the rim nearly

<sup>1</sup> For the use of triangles in this period compare Wide, *Athen. Mitt.* XXXV, p. 21, and Pl. VI, 2.

to the base.<sup>1</sup> The fragments of this jar were found scattered throughout the tomb; whether it originally contained human remains is accordingly uncertain.

2. Large flask, Fig. 75, of soft yellow clay. The design, which is badly worn, consists on either face of the flask of concentric circles, broken once by a circle of zigzag lines.<sup>2</sup> The neck is entirely covered with black paint, below which is a fringe of vertical lines. Around the outside of the vase from handle to handle runs a chain of triangles. The pieces of this extraordinarily large flask, which measures no less than .455 m. in height and .37 m. in diameter, were found scattered throughout the tomb.

3. Open-work vase of soft buff clay, Pl. XXXI, 2. The horizontal parts of the vase and the perforated quadrangular pieces were once covered with a reddish brown paint, of which little now remains. The slanting pieces of the lower part seem to have been unpainted. The openings of the vase were apparently cut when the vase was partially hardened. Such open-work vases, useful for holding fruit or the like, are common in the geometric period,<sup>3</sup> but have not been found before in Crete.

4. Open-work vase similar to the foregoing except that the pattern in both upper and lower courses is the same, Pl. XXXI, 1. Only the horizontal pieces were painted.

5. Bowl and cover, Pl. XXXII, 2, of soft buff clay. The design on the shoulder, painted in dull brown, consists of groups of vertical lines and rows of short slanting lines. Intervening panels are adorned with a single horizontal waved line. The

<sup>1</sup> For similar handles, cf. the jar from Erganos, *A. J. A.*, 1901, Pl. VI, 4.

<sup>2</sup> Cf. Wide, *loc. cit.*, p. 28 and Pl. 5, 2.

<sup>3</sup> Cf. Dragendorff, *Thera* II, p. 151, *Abb.* 363 and 364; *id.*, p. 308, *Abb.* 495; *Annali del Istituto*, Vol. 44, 1872, *Tav. d'agg.* K 12; *Jahrbuch*, 1888, p. 341, Fig. 23; *Athen. Mitt.*, 1893, Pl. VIII, 4; *Εφ. Ἀρχ.*, I, 1898, p. 107, Fig. 27.

lower parts of the vase and the lid are decorated with bands; the handles are also decorated with horizontal stripes. The lid has two perforations by which it was tied to the handle.

6. Similar amphora and cover, Pl. XXXII, 1. The clay is the same as in the preceding; the paint is redder. The lids and lower parts of the vases correspond exactly. The decoration on the shoulder here consists of horizontal rows of triangles, those in the second row being differently set from the others.



Fig. 76. Krater of the Quasi-Geometric Style from Chamber-Tomb I (1 : 6).

7. Krater, Fig. 76, of good buff clay. The interior is covered with black paint. On the outside the decoration consists of horizontal bands and of the pattern described on p. 21. The handles are of a double type frequent in the geometric period.

8. Large jar which contained vase 26, and burned bones inside, Fig. 77. The clay is reddish buff; the decoration consists of horizontal bands and on the shoulder of groups of vertical lines, the outermost of which are fringed.

9. Kylix of fine buff clay and good hard slip, Pl. XXV, 2. The design is painted in reddish brown and consists of horizontal

bands, a row of lozenges on the shoulder, and another of triangles on the foot. The interior is covered with dark paint. The handles are embellished with knobs.

10. Bowl of gritty buff clay. The inside is covered with a thin black paint. The color of the paint on the outside shades from brown to red. The pattern resembles that of 5.

11. Similar bowl of fine buff clay with slip, Pl. XXIX, 1. Part of the foot and several other pieces are missing. The



Fig. 77. Krater from Chamber-Tomb I (1 : 6).

paint used for the interior and for the design shades from brown to black. The decoration presents a new combination of familiar motives; it resembles that of Pl. XXXII, 2, but has in addition the quasi-Minoan curl which appeared on the vase on Pl. XXIX, 2.

12-17. Similar smaller bowls, Fig. 78. The clay of which they are made is light, thin, and well sifted. The interior as heretofore is covered with dark paint. The design consists merely of horizontal bands and groups of vertical lines.

18. Similar bowl, the decoration of which was achieved by dipping the vase as far as the foot into dark paint. This bowl together with the preceding numbers 10-17 are, as regards shape, merely enlargements of the following.

19-22. Cups, decorated like the above by being dipped into black paint, Fig. 79. Four specimens were nearly intact. It was estimated that 33 had originally been interred in the tomb. These cups abound on every Cretan geometric site. They were found by Mr. Hogarth in the geometric graves at



Fig. 78. Bowl from Chamber-Tomb I (1 : 3).

Knossos;<sup>1</sup> by Mrs. Hawes at Kavousi;<sup>2</sup> by Sig. Halbherr at Erganos; and lately in great numbers by Mr. Hagidakis in the upper stratum at Tylissos. They have also been found in Thessaly.<sup>3</sup>

23. Pieces of an oinochoe, of soft yellow clay with high slim neck and twisted handle. The entire vase was covered with a reddish paint. The clay of this specimen was only partially baked and consequently crumbled to bits.

<sup>1</sup> *B. S. A.* VI, p. 84, Fig. 26.

<sup>2</sup> *A. J. A.*, 1901, Pl. I (opp. 124).

<sup>3</sup> Wace and Thompson, *Prehistoric Thessaly*, p. 209 c.

24. Upper part of flaring bowl of good buff clay. The design painted in brown consists of groups of vertical and slanting lines, the outermost fringed. The shape of the rim indicates that the bowl once had a cover.

25. Amphora, Pl. XXXIII, of buff clay. Pieces from the rim were not recovered. The lower part of the vase is decorated with two broad and two narrow bands of reddish paint. On the shoulder are groups of concentric half-circles within the innermost of which is what looks to be a survival of a Late Minoan III stereotyped bud.<sup>1</sup> Waved lines ornament the neck and appear also in the decoration of the shoulder.

26. Amphora of fine buff clay ornamented with horizontal bands and with a single zigzag line on the shoulder. The shape with its slender foot and narrow neck is in marked contrast to the preceding amphora. This specimen was found intact together with burned bones within the jar of Fig. 77.



Fig. 79 (1 : 5).

27-28. Pieces of two flasks similar to that of Fig. 95, but smaller. One has an air vent bored through the base of the handle.

29. Small cup of buff clay, part of rim lacking. The decoration in dark paint is confined to two horizontal stripes and to a row of vertical lines about the shoulder. This cup was found, together with the pieces of twelve iron blades, in an unpainted jar of coarse clay.

30-32. Unpainted bowl of fine buff clay. The shape is unusually graceful and well fashioned. It terminates below in a point as do the covers to the vases in Pl. XXXII. The

<sup>1</sup>Cf. *Transactions of the Department of Archaeology of the University of Pennsylvania*, Vol. II, Part I, p. 39, Fig. 53.



handles, which are nearly cylindrical, are attached horizontally just below the rim. Pieces of two other similar bowls were also recovered.

33. Bügelkanne of fine buff clay with slip. This was the only bügelkanne from the tomb. It resembles closely that shown in Pl. XXVII, 1. Like the other specimens from Vrokastro, it has an air-hole on the shoulder opposite the spout, and a small knob on the top of the false neck, both characteristic of post-Mycenæan bügelkannen.<sup>1</sup> The decoration consists of horizontal bands and of various combinations of zigzag lines.

The objects other than pottery from this tomb were as follows.

1. Bronze tripod support, ht. 377 m., Fig. 80 and Pl. XXXIV, 1. The fragments of this tripod were found scattered throughout the tomb. All were recovered except a part of one leg and portions of the cross supports. No traces were found, however, of a bowl or cauldron which surmounted it. The tripod is made of cast bronze. It consists of a circular support resting on three legs ornamented with lateral ridges and midribs which terminate at the top in scrolls like those on early Ionic capitals. Above the scrolls is a low abacus. The legs are flat except for a rounded piece above the circular foot; they are strengthened by slanting supports which pass from a point at a third of the distance of their height to the circular top, and by horizontal braces which are united in a central ring.

This tripod is in type quite similar to one found by Mr. Hogarth in Grave 3 of the geometric cemetery of Knossos, Pl. XXXIV, 2, where it was associated with a fully developed

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<sup>1</sup> Cf. Wide, *Athen. Mitt.*, XXXV, p. 19; and *Jahrbuch*, 1899, p. 41, Fig. 26; Xanthoudides, *Εφ. Ἀρχ.*, 1904, p. 44.

style of geometric pottery.<sup>1</sup> The chief difference is in size, that from Knossos being only half as high as our specimen; there is also this difference, that the midrib on the legs of the Vrokastro tripod divides and follows the curves of the volutes,

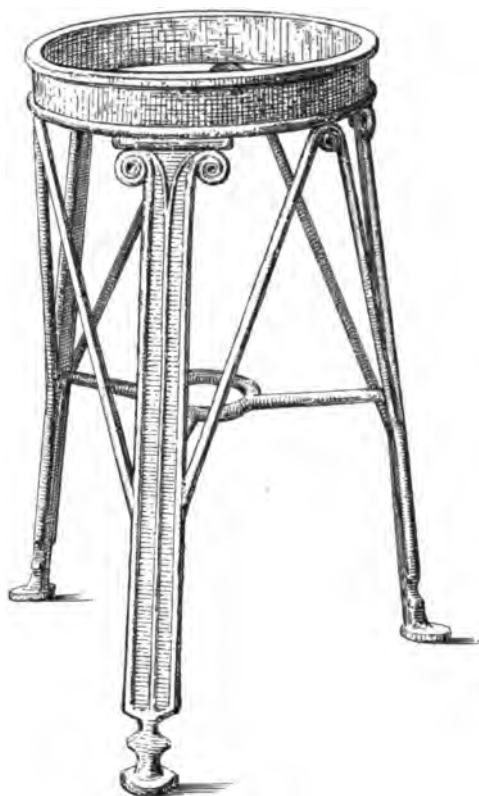


Fig. 80. Restoration of Bronze Tripod from Chamber-Tomb I (1 : 4).

whereas that of the Knossos specimen extends straight to the abacus.

Another striking parallel to this tripod may be adduced from Cyprus. In Grave 58 at Enkomi, were found the pieces

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<sup>1</sup> See *B. S. A.* VI, p. 83, Fig. 25. Mr. Hogarth has generously allowed me to reproduce this specimen here.

of a tripod now in the British Museum and reproduced here, Pl. XXXIV, 3, by kind permission of Mr. A. H. Smith. It is slightly taller than our specimen<sup>1</sup> and the circular support is decorated with rows of herring-bone ornaments. The abacus is lacking and the midrib of the legs runs straight to the top as in the Knossos specimen. It also apparently once had horizontal supports uniting in a central ring. This Enkomi tripod was found with iron blades, an ivory draught-box, and native Cypriote ware.<sup>2</sup> Another tripod similar in type but bearing on its circular support a frieze of running animals, was found at Curium by Cesnola, and is now in the Metropolitan Museum.<sup>3</sup>

And lastly may be cited for purposes of comparison, a tripod found in a geometric grave southwest of the Pnyx.<sup>4</sup> It is .45 m. high. The legs are ornamented with herring-bone ornament, the circular top with a row of spirals, between bands of rope pattern.<sup>5</sup>

In spite of differences in ornamentation, these tripods correspond closely in form and must date from approximately the same period. In determining this period, the Mycenæan character of the Curium tripod and the geometric associations of the Knossos and the Athens specimens are important; the former indicate the end of the Mycenæan period, the latter the

<sup>1</sup> Both Mr. Hogarth and Dr. Poulsen wrongly suppose that this Enkomi specimen is of much smaller dimensions; the latter (*Jahrbuch XXVI*, p. 229) calls it a "Miniaturdreifuss." In reality it is .43 m. high.

<sup>2</sup> See Murray, *Excavations in Cyprus*, p. 31. See also, *B. S. A.* XVIII, p. 95.

<sup>3</sup> See Cesnola, *Cyprus, Its Cities and Tombs*, p. 335; Furtwängler, *Sitzungsberichte der bayerischen Akad.*, 1905, p. 270.

<sup>4</sup> *Athen. Mitt.*, 1893, p. 414, Pl. XIV.

<sup>5</sup> The statement of Dr. Poulsen, *loc. cit.*, that the Enkomi tripod resembles this Dipylon specimen "*bis in die kleinsten Details*" is obviously an exaggeration. With these tripods should also be compared the fragment from the Acropolis, De Ridder, *Bronzes trouvées sur l'acropole d'Athènes*, p. 23, Fig. 24. For the further development of this form of tripod support, compare *Mon. Ant.* VII, pp. 290-326.

period of the fully developed geometric style. Since, however, the Mycenæan style lived on late in Cyprus, the Curium specimen need not be assigned to a period earlier than that known as "sub-Mycenæan" and since, on the other hand, such pieces of bronze-work would doubtless survive for several generations, the Athens specimen and that from Knossos may well have been made, not in the period of a mature geometric style to which the pottery found with them belonged, but in an earlier period of the iron age. We thus arrive at the conclusion that these tripods date from the sub-Mycenæan or early geometric period. To substitute for these general terms specific dates, is difficult. One piece of archæological evidence, however, is available in the connection established by Furtwängler between a group of Cypriote bronzes and the bronze paraphernalia made for King Solomon's temple by Hiram of Tyre.<sup>1</sup> He pointed out that a bronze cart found at Larnaka, Cyprus, corresponded exactly to the description in 2 Kings, VII, 27-37, of the mekônôth made by Hiram. Another similar cart was found in Grave 97, Enkomi. Both specimens present such striking analogies to the tripods described both as regards technique and ornamentation that it is plausible to regard them all as the products of a single Cypriote foundry. Furtwängler assigned the Enkomi tripod to *ca.* 1000 B. C. and the Athens specimen to the following century.<sup>2</sup>

2. Six faience seals, all intact but one which is broken along its shorter diameter, Fig. 81 and Pl. XXXV. The faience of which they are made is now rotted and friable. No traces of

<sup>1</sup> *Sitzungsberichte der bayern. Akad. der Wissenschaften*, 1899, Part II, p. 420-433. Cf. also Stade, *Zeitschrift für die alttestamentliche Wissenschaft*, 1901, Vol. XXI, p. 145, and G. Karo, *Archiv. für Religionswissenschaft*, VIII, Beiheft, pp. 54-65.

<sup>2</sup> Poulsen, *loc. cit.*, pp. 228 and 247, endorses this date, assigning this tripod to a period slightly anterior to 1000 B. C.

blue coloring remain; these were abundant, however, on the beads which were found with the seals and were doubtless worn with them. The backs of the seals consist each of a pair of shells between which is a perforation. The sealing surfaces bear in intaglio pseudo-hieroglyphs, three being like that of Fig. 81, 2, and two like that of Fig. 81, 3. The sixth shows a hawk-like figure, Horus (?) with a staff in his hand. The hieroglyphs, which are crudely moulded, are unintelligible.



Fig. 81. (2 : 3.)

The question arises as to whether they are importations from Egypt, or native Cretan imitations of con-

temporary Egyptian products. Mr. H. R. Hall, of the British Museum, adheres to the former view; Mr. Petrie suggests to me that they were made by Greeks in Egypt for export. In view of the active commerce between Egypt and the Ægean in this era this view seems more probable than the supposition that Cretans had established native factories for the manufacture of glazed objects.

A similar seal was found in Eleutherna, Crete,<sup>1</sup> and another in Grave 24, Enkomi, Cyprus.<sup>2</sup> Nothing is known about the associations of the Eleutherna seal; the Enkomi specimen was associated with pieces of an ivory relief and with two steatite seals the date of which could not be definitely established. In Egypt similar seals have lately been found in the excavation of a village at Lisht which has been dated to the XX-XXII dynasties,<sup>3</sup> and this seems as close a date as can be assigned to them independently.

### 3. Beads, Pl. XXXV. About 250 beads were recovered

<sup>1</sup> Εφ. Ἀρχ., 1907, Pl. 6, No. 42.

<sup>2</sup> Murray, *Excavations in Cyprus*, p. 21 and Pl. 24.

<sup>3</sup> I owe this information to Mr. A. M. Lythgoe, of the Metropolitan Museum.

from this tomb. Several were of carnelian, one was of steatite, the rest of faience. In the case of these beads it was possible to examine their material more closely than that of the seals. Some specimens were made of a grayish brown clay and almost all traces of a glaze had disappeared; others were made of a whitish clay like that of the seals and retained still their coating of pale blue glaze. The beads of the grayish brown clay were invariably of the plain elongated type. The others were of three types: a barrel-shaped ribbed bead, a spherical ribbed bead, and a small disk-like bead used seemingly to separate the others in stringing. The spherical ribbed bead occurred at Amathus, Cyprus, a site which yielded scarabs of the XIX–XXI dynasties; it was found also in the Lisht villages of the XX and XXI dynasties.

4. Bronze fibula, Pl. XX C. This fibula is asymmetrical with a high forearm separating the bow from the catch. The arch is adorned with two bead-like protuberances. It corresponds accordingly to the third type of fibula enumerated in Mr. J. L. Myres' classification of Cypriote fibulæ.<sup>1</sup> In Cyprus it was found associated with Late Mycenæan and sub-Mycenæan pottery,<sup>2</sup> but there is reason to believe that it has also been found in later contexts; the record in regard to Tomb 98 at Kurion is not quite clear, and if we are not mistaken as to the type of fibula shown in Dussaud, *L'île de Chypre*, p. 207, Fig. 92, we have here an instance of its association with pottery of the Græco-Phœnician type. This type of fibula was found at Assarlik again in sub-Mycenæan context<sup>3</sup> and at Aigina.<sup>4</sup>

5. Pieces of a bronze fibula similar to the foregoing.

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<sup>1</sup> *Annals of Archaeology and Anthropology*, Vol. III, pp. 138–144.

<sup>2</sup> Myres, *loc. cit.*, and Murray, *op. cit.*, p. 68 and Figs. 92 and 93.

<sup>3</sup> *J. H. S.* VIII, p. 74, Figs. 17 and 18.

<sup>4</sup> *Aigina*, Pl. 116, No. 14.

6. Larger bronze fibula of the same type as 4, except that the catch is in this case narrower at the base. This specimen is broken into four pieces but is complete save for the tip of the pin and a bit of the clasp.

7. Pair of bronze tweezers or snuffers.

8. Gold ring with plain bezel comparable to that found in Tomb A at Mouliana.<sup>1</sup> Fig. 82.

9. Bronze fish-hook.

10. Axe-head of iron, length .22 m., weight 2.475 kilograms. Like the other objects made of iron, this axe-head is so badly corroded as to have lost its original contours. One of the cutting edges is also broken. The central hole for insertion of a handle is now partly choked with corroded iron and measures

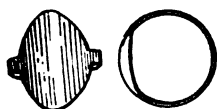


Fig. 82 (3 : 5).

but .03 m. in diameter. Originally it cannot have measured more than .04 m., which seems a very small aperture for so heavy an implement. A carefully selected piece of wood,

however, might have withstood the strain.

11. Iron adze, badly corroded.

12. Iron spear-end, Pl. XXI B.

13. Curved iron knife with short shaft for insertion in handle, Pl. XXI J. The concave edge is for cutting.

14. Pieces of slender iron knife, length .131 m., greatest width .012 m.

15. Part of iron wedge or chisel.

In addition to these iron instruments, which were fairly well preserved, there were also found masses of corroded iron, the fragmentary remains of spear-ends, knives, and swords. Mention has already been made of the bits of twelve iron blades

<sup>1</sup>Εφ. Ἀρχ., 1904, p. 37, Fig. 8; cf. also a ring from Praisos, *B. S. A.* VIII, p. 248, Fig. 16.

found together with a cup inside a burial jar. One of these, it was noted, had bronze rivets. As many as twenty-five iron weapons, it was estimated, had been buried in the tomb. And lastly, in the enumeration of the contents of this tomb should be mentioned four large disks of clay and one of stone, Fig. 83. Three had rounded tops and resembled great loaves of bread; others were flat and one was perforated. Had such disks not been found also in the town, they might have been regarded as substitute loaves for the use of the dead. Since,

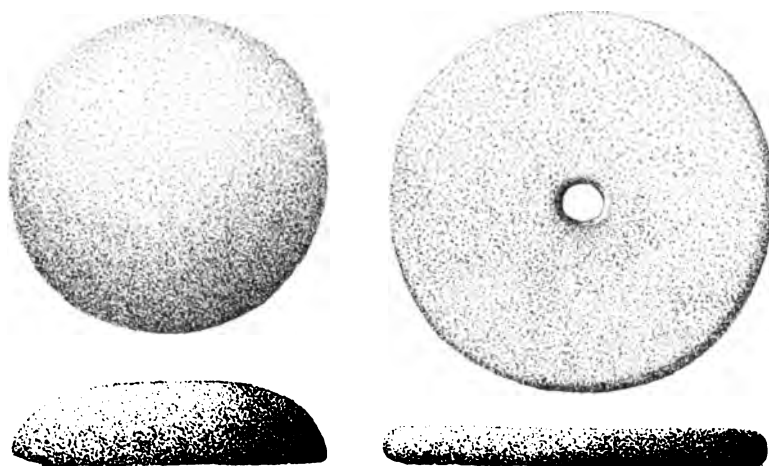


Fig. 83. Sketch of Clay and Stone Disks found in Chamber-Tomb I (1 : 6).

however, they appeared also in the Vrokastro houses, it is preferable to regard them as heavy lids employed to cover and protect the jars in which the ashes of the dead had been laid away.

#### CHAMBER-TOMB II.

This tomb lies about a kilometer southwest of the Karakavilia tomb on the west side of the ridge Mazikhortia. The chamber itself is an irregular rectangle measuring 2.04 m. from the beginning of the dromos to the rear wall and 1.70 m. in the



opposite direction. The height of the tomb as far as the uppermost course preserved was 1.09 m. The roof had fallen in. The dromos was .47 m. wide; its entire length was not cleared.

The contents of this tomb were extraordinary; they consisted of twenty-four skeletons, three vases and one fibula. No traces of cremation were detected. The space in the tomb seems scant for so many uncremated bodies, but it must be remembered that the skeletons were placed in a crouching position. The skulls were found ranged in rows around the outside of the tomb. The only one which was well enough preserved to be measured showed a maximum length of .187 m. and a maximum breadth of .123 m. This specimen, however, was crushed behind the ears and somewhat flattened behind. In addition to the masses of human bones, there were also found, and these in the upper stratum of the tomb, the teeth and bones of cattle, indicating, perhaps, that a victim was slain in honor of this strange interment, which must have been due to either war or pestilence.

The meagre offerings left with these dead were as follows.

1. Small jug, Fig. 68 A, decorated with groups of horizontal lines and with a row of concentric circles on the shoulder. This jug is the prototype of those of Fig. 97. Similar jugs were found at Kavousi and Milatos.

2. Fragments from a bird-shaped vase like that of Fig. 92, 1.

3. Pieces of a badly rotted cup with two vertical handles and a single broad band about the body of the vase.

4. Iron fibula, Pl. XIX D, with high symmetrical arch. This *fibula ad arco*, or semicircular fibula, is found over a wide area.<sup>1</sup>

<sup>1</sup> For a similar specimen from Crete, see *A. J. A.*, 1901, p. 136, Fig. 2. Outside of Crete it has been found at Ephesus (Hogarth, *Ephesus*, Pl. XVII, Nos. 12 and 13), in Italy (Montelius, *La civilisation primitive en Italie*, Serie A, Pl. V, 41; *id.*, Serie B, Pl. 213, No. 1), and in the Caucasus (Virchow, *Das Gräberfeld von Koban*, Pl. I, 4).

## CHAMBER-TOMB III.

This tomb was the second found on Mazikhortia; it lies between the Karakovilia tomb and that just described. It measures 1.76 m. from the dromos to the rear wall, and 1.34 m. in the opposite direction, and was 1.36 m. deep from the floor to the uppermost course preserved. The dromos was .60 m. wide; it was faced with rubble walls to a distance of 1.51 m. The height of the dromos door was .85 m.

Seven skulls were counted in this tomb. Neither these skulls nor any other bones showed traces of burning. There was noted, however, adjacent to vases 4, 5, and 6, a few bits of charcoal, so that it is possible that these vases should be associated with a cremated interment. The presence of a quantity of beach pebbles indicated that the floor of the tomb had been prepared with these as in Chamber-Tomb I. The pottery from this tomb was as follows.

1. Small oinochoe of soft yellow clay. On the shoulder, which is sharply differentiated from the neck, is a row of concentric semicircles painted in black. Cf. Wace and Thompson, *Prehistoric Thessaly*, p. 211, Fig. 146 b.

2. Larger oinochoe, Pl. XXVII, 4, of similar but harder clay. The shape is both graceful and substantial. The design, painted in black, consists of broad bands about the body of the vase and a row of concentric circles on the shoulder. The rim, the base of the neck, and the handles are also decorated with bands. The circles have the look of being drawn with compasses. Only the upper halves of them originally showed above the top band.

3. Unpainted flask of coarse red clay, ht. .28 m.

4. Bowl and cover of finely levigated red clay without slip, Pl. XXVII, 2. The cover is slightly broken and there is

also a piece lacking from the rim. There are holes in both cover and rim for tying. The design, like those on vases from Chamber-Tomb I, produces a maximum of effect with a minimum of originality. Between two horizontal bands is painted a row of lozenges, the central one filled with checkers, the outer two with cross-hatchings. The latter show also a fringe of parallel lines like that in Pl. XXXII, 2. A similar bowl and cover were found by Mr. Hogarth in Grave 6 of the geometric cemetery at Knossos.<sup>1</sup>

5. Hydria of coarse brown clay, ht. 171 m. The pour-handle is broken away and fragments from the rim are lacking. Traces of bands of black paint remain on the shoulder and the foot.

6. Bowl with two horizontal handles. The decoration is confined to two horizontal bands and a waved line on the shoulder.

7. Bowl with vertical handles, of soft buff clay. The neck is ornamented with a painted zigzag pattern and the shoulder with an incised pattern of lines and dots.

8. Amphora, Fig. 84, of poor buff clay. Several pieces are lacking. The shape is characteristic of the mature geometric style. Bands of black are painted on the rim, handles, the line where the neck joins the shoulder, the body of the vase, and the foot. The main decoration on the shoulder consists of three groups of concentric circles, one partly concealed by a band of black and a hatched triangle. Cf. *Jahrbuch*, 1899, p. 40, Fig. 22.

9. Pieces of two cups like those of Fig. 79 and pieces of a bürgerkanne.

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<sup>1</sup> B. S. A. VI, p. 84, Fig. 26

The objects other than pottery from this tomb were the following:

1. Bronze disk with two perforations near margin, Fig. 85 N.
2. Piece of bronze saw, perforated at one end and decorated with two lines of punctuated dots.<sup>1</sup>
3. Bit of yellow steatite perforated.
4. Two pendants of rock crystal, Fig. 85, O and R.
5. Faience beads, five of the small disk type, and one of the elongated type with plain surface. These are entirely similar to the beads from Chamber-Tomb I.
6. Bronze bead.
7. Small globular bead of steatite.
8. Pieces, still adhering to the knuckle bones, of two bronze rings made of flat bands.
9. Larger bronze ring, Fig. 85 A.
10. Bronze bracelet of light wire, Fig. 85 E. The bracelet is open; one tip is lacking.
11. Bronze fibula, Fig. 85 M and Pl. XX F. The type resembles that of Pl. XX D but the catch is broader, the swelling on the bow larger and the bead-like ornaments of the bow are in group of threes. This specimen is only slightly asymmetrical.
12. Bronze fibula of symmetrical semicircular type, Fig. 85 Q.

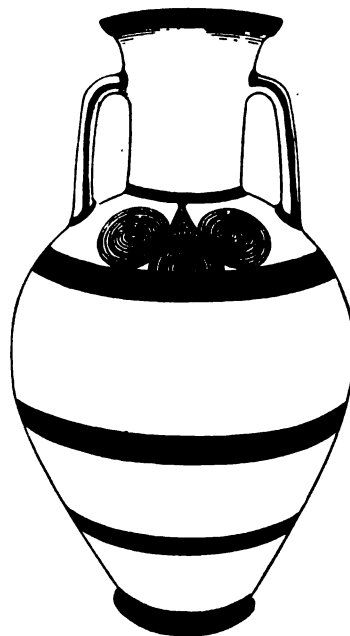


Fig. 84. Amphora (1 : 7).

<sup>1</sup> Cf. 'Εφ. 'Αρχ., 1904, p. 31; B. S. A. VII, p. 135, Fig. 46.

13. Pieces of nine straight pins their heads adorned with bosses, Fig. 85, G-L. These pins, it is now known, were used to fasten garments at the shoulder. For a discussion of the method of wearing them and of their history, see Thiersch in *Aigina*, pp. 404-410.

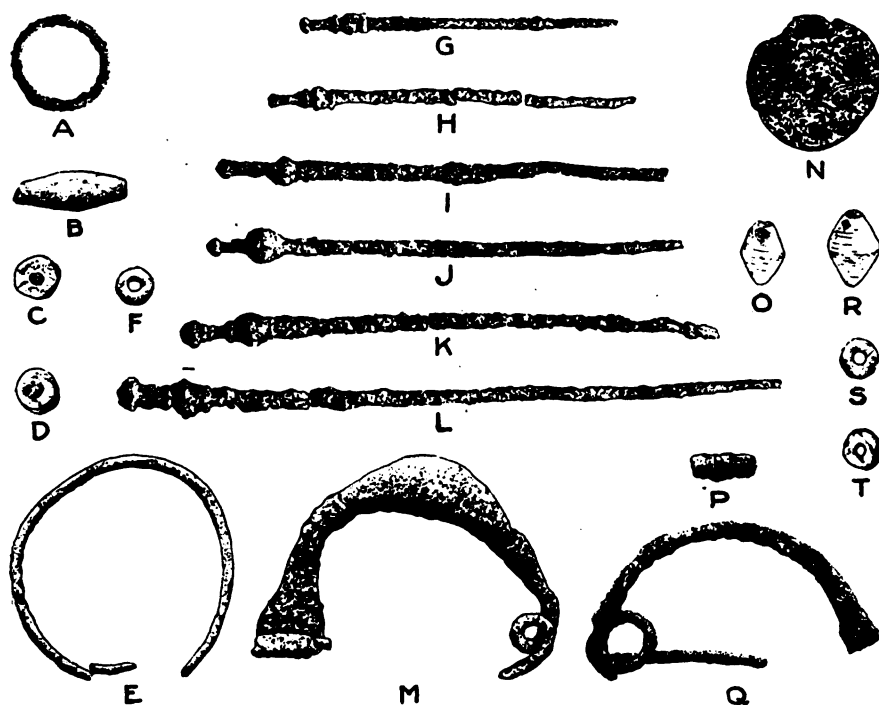


Fig. 85. Miscellaneous Small Objects from Chamber-Tomb III.

#### CHAMBER-TOMB IV ON AMIGTHALI.

This tomb was more irregular in shape than those just described. It is further distinguished from the others by the fact that the lintel consisted of two large stones 1.44 m. in length, .40 m. in height, and .30 m. in breadth. The greatest length of the chamber itself is 1.80 m., width 1.545 m., height as far as preserved, 1.15 m. The entire roof had fallen. Cre-

mation, not inhumation, was practiced in this tomb. At the right of the dromos door were the remains of a large unpainted jar of coarse clay containing a skull and bones that showed clear traces of burning. In a bürgerkanne, the side of which was broken away, there were also found burned bones, but this may have been due to chance. Bits of bones, however, were noted in another small unpainted jug, .18 m. high. Bones which showed signs of cremation were also found scattered about in the tomb. Of inhumation without cremation there were no traces, although it should be stated that the difference is slight between the bones of unburned bodies and those of bodies the flesh of which has been burned away. In cases where bones of cremated bodies were not gathered into vases, their appearance might be quite similar to that of the bones of unburned bodies the original position of which had been disturbed by the collapse of a roof.

Unfortunately the pottery from this tomb was of a very indeterminate character. The majority of these vases were entirely unpainted. Many were of a coarse clay which had rotted to mud before the tomb was opened. Most of them lay opposite the door; those which could be preserved were as follows.

1. Oinochoe of coarse greenish clay, ht. .18 m., Fig. 86 E. The decoration consists of horizontal bands and of a group of narrower vertical bands below the spout, connected by slanting lines. The shape is good and the decoration, in spite of its simplicity, effective.

2. Unpainted bowl of pinkish clay, ht. .09 m., diam. .177 m. The shape seems to be modeled after that of stone vases, Fig. 86 G.

3. Krater with horizontal handles, ht. .151 m. Piece from

the rim is lacking. Black stripes are painted around the body of the vase and zigzag pattern on the shoulder,<sup>1</sup> Fig. 86 D.

4. Triple vase of coarse red clay, Fig. 86 F. This very unusual vase is made up of three cups to each of which a leg and handle are attached; one handle is missing.<sup>2</sup>

5. Unpainted bügelkanne, ht. 152 m., Fig. 88 C.

6. Pieces of two other bügelkannen.



Fig. 86. Pottery from Chamber-Tomb IV (2 : 9).

7. Small cup with flaring sides and two horizontal handles, ht. .067 m., diam. .107 m., Fig. 86 A.

8. Small bowl, Fig. 86 B, decorated with horizontal and vertical bands.

<sup>1</sup> This vase may be compared to one found in a grave at Rakhmani, Thessaly. Wace and Thompson, *Prehistoric Thessaly*, p. 47, Fig. 23 e.

<sup>2</sup> The vase at the right of Fig. 26, *B. S. A.* VI, p. 84, from Knossos cemetery, Tomb 6, is apparently analogous. Cf. also Furtwängler and Löschcke, *op. cit.*, Pl. III, 23, VII.

The other objects found in this tomb were as follows.

1. Bronze pin, Fig. 87 K.
2. Perforated steatite disk ornamented with crudely incised design of animals, Fig. 87 G.
3. Similar undecorated disk.
4. Heavy bronze ring, Fig. 87 C.
5. Two slender bronze rings, adhering to one another, .018 m. diam.

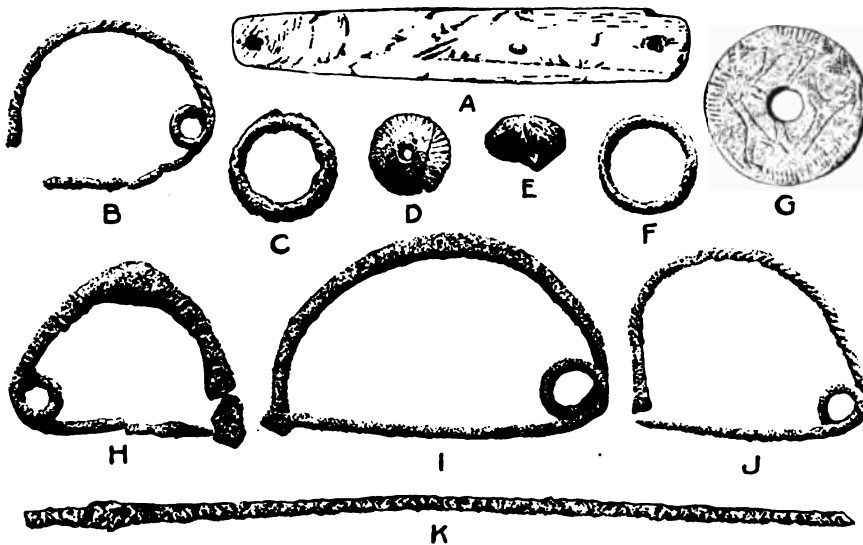


Fig. 87. Miscellaneous Small Objects from Chamber-Tomb IV (1 : 2).

6. Whetstone, quadrangular and tapering, with string holes at either end,<sup>1</sup> Fig. 87 A.

7. Part of amygdaloid carnelian sealstone. The design indicates the last stages of Minoan glyptic art. Either the sealstone itself or else the stereotyped design survived from the preceding era, Figs. 87 E and 88.



Fig. 88.  
Sealstone  
(2 : 3.)

<sup>1</sup> Cf. Myres-Richter, *Cyprus Museum Catalog*, p. 52, 481-487.



8. Porcelain ribbed bead, Fig. 87 D. This type of bead which was conspicuous by its absence in Chamber-Tomb I, enjoyed a wide popularity in the Late Mycenæan period. It was found at Mycenæ, at Palaiokastros, and in the Zafer Papoura cemetery,<sup>1</sup> and lately by Mr. Stais at Sounion.

9. Eight beads of the small disk-like type like those in Fig. 85.

10. Faience seal like that of Fig. 81, 2, but slightly smaller, Pl. XXXV, upper right hand seal.

11. Globular bead of iridescent glass. Glass, it is now known, makes its appearance at the end of the Minoan age. It was found, for example, in the Zafer Papoura tombs, *op. cit.*, p. 72.

12. Cylindrical steatite bead.

13. Bronze fibula of twisted wire, Fig. 87 B and Pl. XIX C. This specimen is complete, although it is slightly bent so that it is no longer symmetrical. This type of fibula, of which several specimens were recovered at Vrokastro, is found over a large area; it occurred at Kavousi, *A. J. A.*, 1901, p. 136, Fig. 2; at Aigina, *op. cit.*, Pl. 116, No. 1; at the Argive Heræum, *op. cit.*, II, Pl. LXXXV, No. 830; at Thera, *op. cit.*, II, p. 300, *abb.* 489a; at Koban, *op. cit.*, Pl. 1, 3; and in Italy, Montelius, *op. cit.*, *série A*, Pl. V, 40, and *série B*, Pl. 213, No. 2.

14. Similar fibula with part of pin broken.

15. Large bronze fibula of the same type as that of Pl. XIX B but larger, Fig. 87 I.

16. Bronze fibula, Fig. 87 H. This specimen resembles that of Pl. XX, C and D, but the bow is symmetrical, the arch higher, and the central swelling larger.

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<sup>1</sup> Evans, *op. cit.*, p. 71, Fig. 81a.

## CHAMBER-TOMB V.

After the excavation of the tombs described, no more of this type were discovered until the last days of the campaign, when trials were made of the lower foothills west of Vrokastro. Here, on the slope Kopranes, three more were brought to light. The first of these was roughly circular in plan, its greatest width 1.66 m., length 2.09 m.; the width of the dromos was 64 m., its height 1.38 m. This tomb had evidently been rifled; not only were there vases parts of which could not be recovered, but the bones were scattered about. There is also a village tradition that the tomb had been plundered within the memory of men living. In the dromos were the fragmentary remains of a pithos; it had been lying on its side and had doubtless contained a burial. The bones from this tomb showed clear traces of burning; one skull was blackened, and many of the bones were rendered brittle by fire. The pottery from this tomb was unusually free from geometric influences. It is as follows.

1. Large bügelkanne, Fig. 89 I, of good buff clay covered with a slip which has now, however, largely chipped away. The specimen has no air-hole and has a large flat base quite unlike the slender, tapering feet of geometric bügelkannen. Horizontal bands decorate the body of the vase. On the shoulder is an irregular hatched area fringed below with a row of curls which gives the ornament some resemblance to an octopus.

2. Flask of good clay only slightly coarser than that of the above, with slip, Fig. 89 G. One handle and several pieces are missing. The ornamentation is confined to four concentric circles and a small knob on either face.

3. Smaller flask of similar clay and with similar slip,

Fig. 89 F. This specimen has but one handle and only one face is preserved.

4. Dipper with handle in shape of bird's head, Fig. 89 D and Fig. 90. The clay is buff and has no slip. It is incised with horizontal and zigzag lines and the whole except the base and handle has been dipped in a black wash. The specimen is



Fig. 89. Pottery from Chamber-Tomb V (1 : 5).

intended to hang, not to stand. The handle is decorated with slanting lines and the head in which it terminates is an effective bit of modeling.

5. Two-handled kylix on tall bulging foot, Fig. 89 A. One handle is missing. The black paint which is used for covering the interior of the vase as well as for the design is badly worn.

The shape is hardly more than a caricature of the graceful kylikes of the best Late Minoan III style.

6. Similar kylix with exactly similar design, Fig. 89 C. The paint, however, is redder.

7. Small oinochoe of poor clay, Fig. 89 B. The design consists of horizontal bands and of a row of triangles on the shoulder.

8. Bügelkanne, with high neck and spout, sharply outlined shoulder and small foot, Fig. 89 E. The usual air-hole occurs. The decoration consists of horizontal bands and various combinations of slanting lines.

9. Bügelkanne, corresponding to the preceding, except that the decoration in this case includes hatched triangles, Fig. 89 H.

10. Pieces of three cups like that of Fig. 79.

In addition to pottery this tomb yielded:

1. Iron knife, Pl. XXI A, broken into four pieces. The tang continues the outer edge of the blade. The cutting edge shows long use. Cf. *Prehistoric Tombs*, p. 22, Fig. 13d.

2. Bronze earring, .023 m. diam., with curved tips which clasp, Fig. 91.

3. Similar earring with ends broken.

4. Bronze ring, inner diam. .018 m.

5. Faience beads of small disk-like type.

6. Obsidian chips. This was the only tomb in which obsidian occurred.

7. Bronze fibula of twisted wire type like that of Pl. XIX C.



Fig. 90. Clay Dipper (1 : 2).



Fig. 91. Bronze Earrings (1 : 2).

## CHAMBER-TOMB VI.

The second chamber-tomb found on Koprane had been partly demolished in recent times by the construction of a terrace wall. Remains of three skeletons were found; they showed no distinct traces of burning. The pottery resembles closely that found by Mr. Hogarth in the Knossos graves. It is as follows.

1. Large flaring bowl, Fig. 92. The inside is covered with black paint; the outside is unpainted. The handles have



Fig. 92. Vases from Chamber-Tomb VI (1 : 5).

upright pieces connecting the horizontal loops with the rim. A similar bowl was found recently in the upper stratum at Tylissos. Cf. also, *B. S. A.* VI, p. 83, Fig. 25.

2. Bird-shaped vase with three knobs for feet and a handle above, Fig. 92, 1. The vase is of poor clay and the design badly worn. It consists of bands and waved lines following the contours of the vase. The margin of the design is in one place treated in the old Minoan fashion which consists of drawing a straight and an undulating line and filling the intermediate space with black. Cf., e. g., *Sphoungaras*, p. 67, Fig. 39.

3. Similar vase less well preserved, Fig. 92, 2. Little remains of the design, which contained, however, a good deal of cross-hatching.

4. Bügelkanne of geometric type with air-hole and knob on false spout. Design, hatched triangles.

5. A bird-shaped vase resembling an askos, Fig. 92, 5, and constituting a type intermediate between that of Fig. 92, 1 and that of a bügelkanne. The decoration consists of horizontal bands and hatched triangles on its upper surface. Cf. *A. J. A.*, 1901, Pl. 1, lower row, extreme right.

Beside pottery this tomb contained the following objects.

1. Bronze ring, .013 m. diam.
2. Coiled iron ring, .013 m. diam.
3. Iron knife-end with four bronze rivets in the tang, Pl. XXI F.
4. Large bronze fibula with high forearm, Pl. XIX H. The bow is quadrangular in section and unadorned. The forearm is sufficiently high to enclose folds of thick drapery.

#### CHAMBER-TOMB VII.

The last of the chamber-tombs to be described and the third found on Kopranes was well built and well preserved, but contained remarkably little. Only a few bits of bones, apparently unburned, were found. The height of the tomb as far as its roof was preserved was 413 m.; its greatest length, 2.24 m. and width, 1.59 m. The dromos was .67 m. high and .745 m. wide. The tomb contained five vases as follows.

1. Cup of the usual geometric type. Cf. Fig. 79.
2. Three bügelkannen, decorated with hatched triangles and provided with air-holes and knobs on their false spouts, Fig. 93.

3. Small jug, .126 m. high, decorated with hatched triangles and a waved line, Fig. 93, 1.

Two other objects from this tomb were the following.

1. Bronze ring with three coils still adhering to the finger-bone.

2. Iron spear-end, .215 m. long.



Fig. 93. Vases from Chamber-Tomb VII (about 1 : 4).

#### B. BONE-ENCLOSURES.

The type of burial to be considered next is less familiar.<sup>1</sup> It was of more frequent occurrence in the Vrokaastro cemeteries than any other one type. The first tombs of this type that came to light were discovered on the lower slopes of Karakovilia while the workmen were ranging about in search of other chamber-tombs. They looked at first to be the remains of very small houses, but their very shallow depth, their small size, and the constant appearance of bones soon precluded this idea, and

<sup>1</sup> Apparently the burials mentioned by Mrs. Hawes in *A. J. A.*, 1901, p. 154 were of this type.

convinced us that we had to do with bone-enclosures comparable in type to those of the Middle Minoan I period discovered by the British excavators at Palaiokastros.<sup>1</sup> A typical bone-enclosure is shown in Fig. 94. It will be seen to consist of a series of small and irregularly shaped rooms, separated from one another by low walls. The bones found within the small rooms usually bore unmistakable traces of cremation, and the pottery buried with them was, generally speaking, of a later type than that found in the chamber-tombs.



Fig. 94. Sketch and Ground Plan of Bone-Enclosure No. 3 (Ground Plan 1 : 250).

#### BONE-ENCLOSURE I ON KARAKOVILIA.

The first bone-enclosure to be described was found on Karakovilia due south of Chamber-Tomb 1. It consisted of three adjoining compartments all of which contained bones, which were clearly charred. Many bits of charred wood were also noted; in fact there was so deep and extended a deposit of black earth as to suggest the possibility of cremation having taken place on the spot. Of the three rooms, the central was the largest; it measured 2.10 by 1.8 m. and was, on an average, .45 m. deep. The other chambers measured, that on the east, 1.42 by 1.70 m. and was .45 m. deep; that on the west, 1.55

<sup>1</sup> *B. S. A.* VIII, p. 291, Fig. 5.



by .74 m. and was .24 m. deep. In all three rooms were found potsherds in abundance. The painted fabrics came largely from bowls and jars like those in Figs. 60 and 68. The easternmost room contained nothing but potsherds; the central room yielded the following objects.

1. Iron sword, Pl. XXI E, badly damaged by oxidation.
2. Three iron spear-ends, Pl. XXI C, D, and H. These, with the preceding, were found piled criss-cross.
3. Many bits of thin bronze plate and wire.
4. Crystal button. Pieces of other buttons were noted. They had no perforations and were beveled on the surface only. They may have been used for inlay and have once adorned the box to which the foregoing bits of bronze also belonged.
5. Pieces from an iron fibula overlaid with gold-leaf. This specimen was of the same type as that in Pl. XIX D.

In the adjoining Room B were found these objects.

1. Beaded bronze fibula of the type of Pl. XX B, the coil, pin, and part of clasp lacking. This type of fibula, conspicuous by its absence from the chamber-tombs, was frequently found in the bone-enclosures. It may be, morphologically, a development from that of Pl. XX C, D, and F, or, as Mr. Hogarth<sup>1</sup> suggests, the beaded ornaments may have replaced real ornaments strung on the bow. The type is well known and occurred at Ephesus,<sup>2</sup> at the Argive Heræum,<sup>3</sup> at Olympia,<sup>4</sup> and at Aigina.<sup>5</sup>
2. Pair of bronze tweezers or snuffers, .06 m. long.
3. Bronze pin, intact but bent, Fig. 58 D.

<sup>1</sup> *Ephesus*, p. 148.

<sup>2</sup> *Op. cit.*, Pl. XVII, 3.

<sup>3</sup> *Op. cit.*, II, Pl. 86, Nos. 877 and 878.

<sup>4</sup> *Olympia, Tafelband*, IV, Pl. 22, No. 368.

<sup>5</sup> *Op. cit.*, Pl. 116, 20 and 21. Cf. also Böhlau, *Aus ionischen und italischen Nekropolen*, Pl. XV, 10.

## BONE-ENCLOSURE II.

Only a few meters southwest of the bone-enclosure just described, a second was located which was found to consist, not like the foregoing of a row of rooms, but of a single chamber. Its isolation and its shape, which was very irregular, seemed due to the fact that live rock crops out on every side of this room, so that only in this one spot was the soil sufficiently deep for a grave. The bits of bones recovered from this chamber were few in number, but showed clear traces of burning. They lay loose in the earth without being enclosed in jars. No pottery was found save a few sherds which were either unpainted or showed variations of the meander motive typical of the developed geometric style.

The objects other than pottery found were as follows.

1. Iron sword, 51 m. long. Three pieces were recovered which completes the specimen save for a bit from the handle and the tip. The shape of the blade, the order of the rivets and the form of the tang correspond closely to those of the sword from Bone-Enclosure I.

2. Large bronze fibula of the geometric type with hollow bow, Pl. XX H. Parts of the clasp and pin are missing and the parts preserved contain several breaks. This fibula is noteworthy both for its size and form. Like the asymmetrical fibulæ of Pl. XIX B and H, it was designed to hold thick folds of heavy material, but unlike these it is symmetrical, for the clasp is as high as the forearm. The bow has the shape of a spoon. It is this type of fibula which has large clasps decorated with geometric ornament.<sup>1</sup> Undecorated examples like this

<sup>1</sup> See, e.g., *Annali*, 1880, *Tav. d'agg.* G; *Jahrbuch*, 1888, p. 362d and 363c; 'Εφ. 'Αρχ., 1892, Pl. XI, 1 and 2; *Arch. Zeit.*, 1884, Pl. 9, 3, and compare the list given in *Atten. Mitt.* XII, p. 14.

specimen have been found at Rhodes,<sup>1</sup> at Thera,<sup>2</sup> at Aigina,<sup>3</sup> at the Argive Heræum,<sup>4</sup> and at Olympia.<sup>5</sup>

3. Smaller bronze fibula of similar type, Pl. XX E. This specimen is of very light bronze and is badly broken. Most of the clasp is missing. The spoon-shaped bar lies in the same plane as the clasp, a variation on the preceding type which was perhaps brought about out of consideration for the wearer's comfort.

4. Still smaller iron fibula of the same type as 2, Pl. XX I.

5. Beaded bronze fibula, Pl. XX F, complete save for a part of the clasp. This type corresponds to the beaded fibula from Bone-Enclosure I, except that the central protuberance is larger than the others. A similar fibula was found at Praisos,<sup>6</sup> associated with pottery of a fully developed geometric style. It occurs also among the fibulæ from Aigina and from Olympia.

6. Pieces of three other fibulæ of similar type.

7. Bronze fibula, Pl. XX J, coil, pin, and part of clasp missing. This pin presents another variation of the beaded type. It resembles the pin of Pl. XX B, except that the beads are here separated by smaller disk-like protuberances.

8. Lentoid agate sealstone, sealing surface damaged, Fig.



Fig. 95  
(2 : 3).

95. The design consists of a group of fern-like devices springing from a horizontal marking and separated from one another by oval depressions. In the exergue is a double zigzag. The design shows no originality and dates from the same decadent period of gem-cutting as that shown in Fig. 88.

<sup>1</sup> *Zeit. für Eth.*, p. 215, Fig. 17; cf. also Schumacher, *Sammlung Antiker Bronzen*, Pl. 1, No. 1.

<sup>2</sup> *Op. cit.*, II, p. 300, Abb. 498p.

<sup>3</sup> *Op. cit.*, Pl. 116, No. 3.

<sup>4</sup> *Op. cit.*, II, Pl. LXXXVI, No. 857.

<sup>5</sup> *Olympia*, *Tafelband IV*, Pl. XXI, Nos. 347 and 350, and Pl. XXII, No. 363.

<sup>6</sup> *B. S. A.* XII, p. 33, Fig. 10.

9. Two bronze fibulæ. They are symmetrical and similar in form to the beaded fibulæ, but their bows are plain.
10. Two pendants of rock crystal.
11. Two glass beads, globular.
12. Faience bead of small disk-like shape.

### BONE-ENCLOSURE III.

This is the bone-enclosure a diagrammatical sketch of which is shown in Fig. 94. It will be seen to consist of four adjacent compartments; in only two of these was found anything beside potsherds. In Room A, that furthest to the west, was found the amphora described below. In its mouth was a cover still adhering so tightly to the jar that it could be removed only by soaking in water. Above the amphora was a cup of coarse clay; inside it were charred bones. We have here, therefore, a clear case of the burial of cremated remains in jars. In Room C were found other charred bones, but these were apparently buried in the earth without being enclosed in jars. The bones from the other two rooms were too few to indicate in what manner they had been interred. Potsherds from all four rooms were of the same period as the amphora.



Fig. 96. Amphora and Cover (1 : 6).

The amphora and cover of soft pink clay are shown in Fig. 96. The painted decoration is nearly worn away on one side. It consists, as usual, of horizontal bands about the lower part of the vase and of panels of geometric ornament on the shoulder.

The neck is also painted with lines, one of which is waved. The cover has a hatched design in the center and a row of quirks around the margin.

Besides the amphora were found an unpainted cup of coarse clay, found above the amphora, pieces of glass beads like those mentioned before, bits of iron pin like that of Fig. 58 C.

In Room C were found pieces of a heavy bronze fibula like that of Pl. XX J.

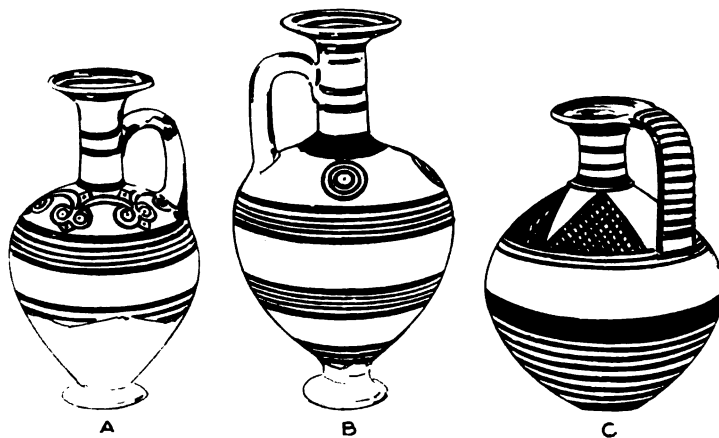


Fig. 97. Small Jugs from Bone-Enclosure IV (about 4 : 9).

#### BONE-ENCLOSURE IV.

This enclosure consisted of three rooms and corresponded in size and arrangement to Bone-Enclosure 1. All three rooms yielded potsherds in abundance; fifty per cent of these were from small jugs of light clay like those of Fig. 97, the rest of larger jars painted and unpainted. The small vases may have been buried inside the necks of the larger ones.<sup>1</sup> All bones were burned. Two of the three rooms contained nothing beside potsherds; the third yielded the vases enumerated below.

<sup>1</sup> Cf. *Thera* II, p. 58.

1. Small unpainted jug of soft buff clay, ht. .065 m.
2. Small jug with flat base, Fig. 97 C. The clay is soft as in the preceding and the painted surface badly worn. The lower part of the vase is ornamented with horizontal bands, the shoulder with a row of finely hatched triangles.<sup>1</sup>
3. Small jug, Fig. 97 B, foot missing. The shape shows several variations on the foregoing; the neck is longer, the handle is attached not to the rim but to the neck, the body is pear-shaped, and, if M. Gilliéron's restoration is correct, the vase rests upon a foot. The decoration consists of horizontal bands between which, on the shoulder, is a row of concentric circles, and in the central zone, vertical rows of arrow ornaments.<sup>2</sup>
4. Small jug, Fig. 97 a, similar to the preceding in type. The shoulder is adorned with a series of volute ornaments which herald a change from the mathematical style of the geometric period. This ornament may be compared with that on a Cretan jug of the orientaling style in the Berlin Museum, *Athen. Mitt.*, 1897, Pl. 6.

Counterparts of these vases exist in the Candia Museum; they have been enumerated and described by Professor Zahn.<sup>3</sup> Outside of Crete, this class of delicate little vases has been found in geometric tombs on Thera.<sup>4</sup> Professor Dragendorff regarded some of these as Cretan importations, others as imitations of Cretan prototypes. He suggests<sup>5</sup> that these jugs may mark the beginning of orientaling influence, a suggestion supported by the decoration of the vase in Fig. 97 A. They are

<sup>1</sup> Cf. *Thera* II, p. 311, *Abb.* 4991, and two jugs in the Berlin Museum für Völkenskunde, *Jahrbuch*, 1900, p. 53, Figs. 111 and 112.

<sup>2</sup> These do not appear in the illustration.

<sup>3</sup> See *Thera* II, p. 179, footnote.

<sup>4</sup> *Op. cit.*, II, p. 311; *Abb.* 499, a and c; p. 58, *Abb.* 200.

<sup>5</sup> *Loc. cit.*, p. 312; footnote, 27.

certainly one of the latest fabrics found at Vrokastro. Professor Dragendorff places them at the end of the eighth or the beginning of the seventh century B. C.<sup>1</sup>

In addition to these vases, this bone-enclosure yielded two bronze pins, to one of which a bit of wire was attached. This is one of several instances in which these pins were found in



Fig. 98. Jar from Bone-Enclosure V (1 : 2).

pairs. The piece of wire must be a remnant of the necklace or string of ornaments which passed from shoulder to shoulder and was attached to the heads of these pins. Such a necklace is clearly shown on the Francois vase.<sup>2</sup>

<sup>1</sup> *Loc. cit.*, p. 321.

<sup>2</sup> Cf. also Thiersch, *loc. cit.*, where a list of vases depicting the use of such pins is given.

## BONE-ENCLOSURE V.

This, like Bone-Enclosure II, consisted of but a single room. Its contents had apparently been disturbed; only a few bits of bones were found. The objects with them were the following.

1. Part of iron blade.
2. Pieces of coarse unpainted jug.
3. Jar with horizontal handles, Fig. 98. The clay is yellow and the design-paint reddish. The decoration within the panel on the shoulder consists of two hatched butterfly ornaments so arranged against pairs of vertical lines as to give the effect of a Minoan double-axe pattern.

## BONE-ENCLOSURE VI.

This bone-enclosure was only a few meters from Chamber-Tomb II. It differed from those hitherto described in that the rooms were not arranged in a single row but were irregularly placed. The rooms were shallow and were themselves of irregular outline. In Room 2 of this group was a pithos on its side containing the unburned bones of a child, which shows that in this period when cremation and interment in bone-enclosures were the rule, it was still the custom to bury children, uncremated, in jars. No indication of another burial in this room was found. In front of the pithos was noted a large flat stone which had apparently served as a lid to the pithos, but which had fallen from its original vertical position. In all the other compartments were found many bones, which, though they were not blackened as was the case in other enclosures, were, in view of their disordered arrangement and fragmentary condition, to be attributed to cremated burials. The contents of this group of rooms were as follows.



Room I. 1. Piece of a beaded fibula, Fig. 100 B.

2. Iron button with bronze center.

Room II. In the southwest corner of this compartment, inside the pithos already described, seven articles were found.

1. Jug of soft clay, Fig. 99 C. The lower part was once entirely covered with black paint. A row of cross-hatched triangles with three horizontal bands complete the decoration.

2. Hydria, of somewhat better clay, with two low hori-



Fig. 99. Vases from Bone-Enclosure VI (1 : 5).

zontal handles, Fig. 99 B. The geometric ornament on the shoulder corresponds almost exactly to that on a jar from the town, shown in Pl. XXVII, 3.

3. Small oinochoe of similar clay, decorated with a waved line on the neck and a row of checkered triangles on the shoulder, Fig. 99 a.

4. Flaring bowl, Fig. 99 D. As usual, the lower part of the vase is ornamented with horizontal stripes; the upper part shows concentric segments, geometrically exact.

5. Bronze fibula of symmetrical type, Fig. 100 C, like that of Pl. XX C.

6. Bronze fibula of similar type, except that the bow is more angular, Fig. 100 A.

7. Crystal bead, hexagonal in section.

Room III. Iron spear-end, broken in three pieces, length .122 m.

Room IV. Iron fibula of a type similar to that of Pl. XX I, but the bow is solid, not hollow.

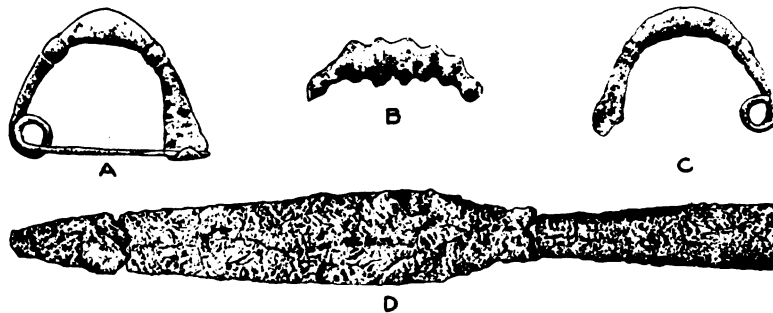


Fig. 100. Iron Spear-end and Fibulæ from Bone-Enclosure VI (1 : 2).

#### BONE-ENCLOSURE VII.

This enclosure was found on Kopranes, not far from Chamber-Tomb V. It consisted of five compartments unsystematically grouped. The compartments were of irregular shapes and were placed at various levels on account of the uneven surface of the soil. The average depth of the compartments was .60 m. In one compartment was found on its side a pithos containing the unburned remains of a child. No objects were found with it. In a second compartment were bones which showed no certain traces of burning, but which, on the other hand, displayed no orderly arrangement indicating a primary burial. With them were found the following objects.

1. Flask of Cypriote type like that of Fig. 57 E. The surface is badly worn but shows traces of concentric circles of varying width and of central protuberances.

2. Bronze fibula, Pl. XIX G. This pin differs from those already described. It is not a symmetrical pin as at first appears; on the contrary, the end of the bow proper is marked by a small protuberance, the outside covering of which is several times slit open. The rest of the pin, which is thinner and flatter, belongs to the clasp.

3. Piece of bronze saw, see p. 143.

4. Iron knife, .07 m. long.

#### BONE-ENCLOSURE VIII.

This enclosure contained two compartments, the walls of one of which were partly broken away. The other compartment measured 2.44 by 1.31 m. and varied from .30 to .77 m. in depth. The bones were unmistakably charred. The contents of the compartment which was intact were as follows.

1. Bronze fibula of type similar to that of Pl. XX B, pin and clasp broken.

2. Large fibula of plain symmetrical flat type with plain flat bow, complete except for pin, Pl. XIX E.

3. Cylindrical bead of thin pale gold with repoussé linear design.

4. Globular bead of rock crystal.

5. Cylindrical steatite bead.

In the other compartment, the walls of which had been partly destroyed, were found the following objects.

1. Bronze fibula similar to that of Pl. XIX D, except that the flat bow is in this case in a different plane from that of the catch, Pl. XIX F.

2. Pieces of small iron saw.

## BONE-ENCLOSURE IX.

This consisted of but a single room, and that partly destroyed. The signs of cremation were clear, one skull being badly charred. The only objects found in this enclosure were parts of two iron knives.

## BONE-ENCLOSURE X.

This enclosure, which, again, consisted of a single room, contained bones burned to charcoal. With them occurred:

1. Part of fibula of twisted wire, type like that of Pl. XIX C.
2. Fragments of a jar of coarse clay, decorated from base to rim with horizontal stripes.
3. Unpainted bowl.

## BONE-ENCLOSURE XI.

This enclosure contained bones burned to charcoal. Beside these bones there occurred the following objects.

1. Part of bronze beaded fibula like that of Pl. XX G.
2. Two bronze pins like those of Fig. 58 C. One of these has an eye just above the point; the other is broken in the middle of a similar eye. The presence of such eyes suggests that a band of ornaments was suspended not only from the heads of a pair of pins as on the Francois vase, but also that a second string of beads and pendants was held at a lower level by the eyes of such pins, although it is also possible that the string passed through these eyes was intended merely to hold the pins in position.<sup>1</sup>

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<sup>1</sup> For other pins with eyes, see Murray, *op. cit.*, pp. 19 and 20, and Pl. VIII; *Cyprus Museum Catalog*, Pl. III, pp. 591 and 594; and *Aigina*, pp. 413 and 415.

## BONE-ENCLOSURE XII.

This enclosure consists of a group of rooms irregularly orientated and shaped. They contained bones blackened by burning and also the following objects.

Room I. 1. Large open-mouthed jar, Fig. 101. Horizontal bands adorn the body of the vase; on the shoulder are painted three zigzag lines with checker pattern between them. The shape is similar to that of the vase in Fig. 61.



Fig. 101. Krater from Bone-Enclosure XII (1 : 6).

2. Pieces of seven cups ornamented with horizontal bands and comparable to that from Courtes, shown in *A. J. A.*, 1901, Pl. IX, No. 17.

3. Amphora, Fig. 102 B, the decoration consists of horizontal bands and a row of concentric circles, two of which in each group are separated by checkers.

4. Amphora of similar shape with double handles, Fig. 102 A. The panel of decoration on the shoulder is filled, strangely enough, with a scale pattern which is entirely Myce-

næan in character. The shape of the vase, on the contrary, is geometric. A better example could hardly be found of the intermingling of Mycenæan and geometric characteristics.

Room II. Bow of bronze fibula with incised lines. It is like one in the National Museum, Athens, from Dodona.

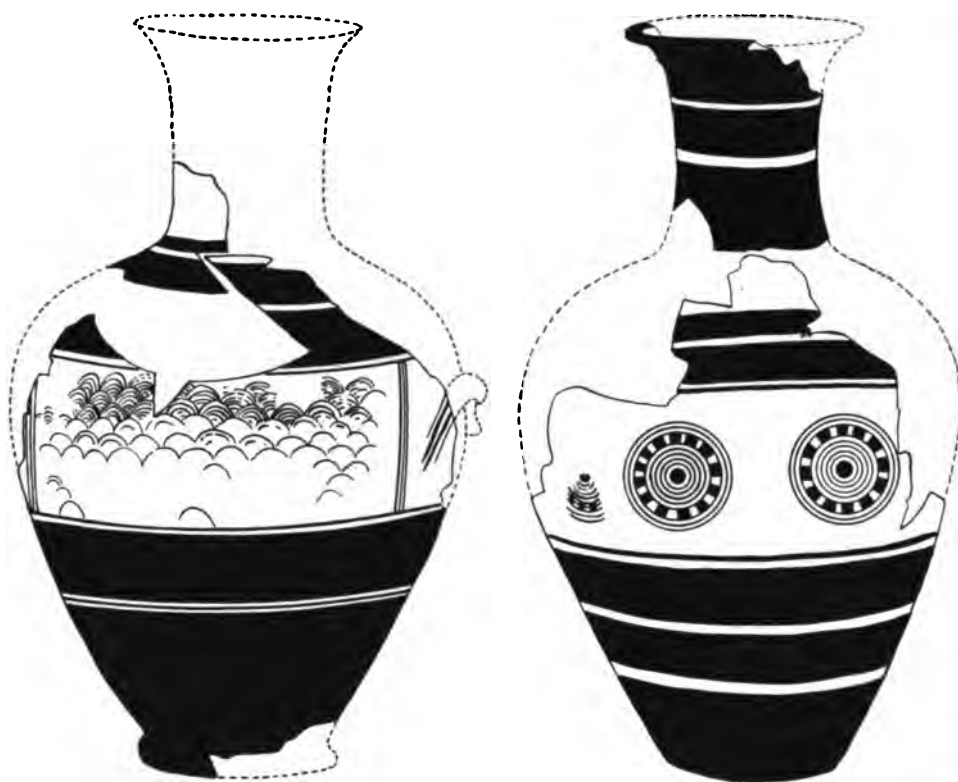


Fig. 102. Two Amphorae from Bone-Enclosure XII (1 : 8).

Room III. Large beaded fibula, Pl. XX A.

Room IV. Jug of coarse clay with two horizontal handles and a vertical pour-handle. The lower part of the vase is decorated with closely ordered horizontal stripes; the upper part shows triangular motives. On the handle is a herring-bone pattern, Fig. 103.

In connection with these bone-enclosures it will be convenient to describe a building, the plan and photograph of which are shown in Fig. 104 and Pl. XXIV 2. It is conspicuous both by reason of its regular plan and its isolation. The fact that it was found in the neighborhood of bone-enclosures suggests that it might have been used in connection with the ritual of burial or cremation. The absence of charred remains precludes the idea that it was the place where cremation actually took place. On the other hand, the discovery close at hand



Fig. 103. Hydria (1 : 3).

of broken terra cotta figurines implies that the building contained a shrine.

It will be seen from the photograph of Pl. XXIV, 2, that the upper surface of the wall is unusually even; evidently the upper courses had been built of brick as in early Greek buildings. Further evidence for brick construction was forthcoming in four blocks of limestone which showed one or more carefully dressed surfaces. These had apparently served as jambs for the doors at either end of the building. A rebate in the surface of the block shown in Pl. XXIII, 2, seems to show that the door-posts had been made of wood.

The only two objects found in this room were a table of offerings and a krater.

1. Clay table of offerings, Fig. 105. The pieces of this table were found scattered throughout the building. Not all were recovered, several pieces of the cross supports being lacking. The object had been carefully repaired in antiquity to judge by the rivet holes which were noted in several places

on the legs. On the top of the table was painted a large rosette.<sup>1</sup>

The other object from this building is the krater of Fig. 106. Several pieces and most of the foot are lacking. This vase is an example of the fully developed Dipylon style. Almost its entire surface is covered with black paint; the only exceptions are three groups of narrow bands about the body, and

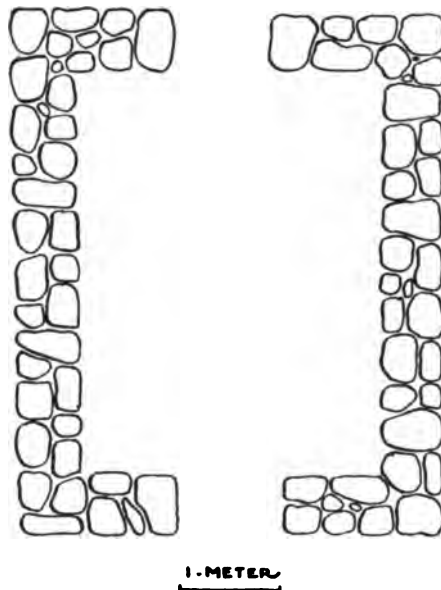


Fig. 104. Plan of House Adjacent to Bone-Enclosures.

the background of the closely ornamented panel on the shoulder. The double handles and the ribbed foot are both characteristic of this class of geometric vases. The clay of which this vase

<sup>1</sup> It is possible that the geometric sherds mentioned on p. 243 of *B. S. A.* VIII "from plates with low vertical sides, decorated on the exterior with large rosettes" may be from similar tables rather than from plates. I know of no clay tables analogous to this specimen; clay tripods or vase supports with openwork bases are fairly frequent, see *B. S. A.* VIII p. 250, Fig. 21, and *Annals of Archaeology*, III, Pl. XXIX, No. 20, and *Εφ. Ἀρχ.*, 1898, Pl. 4, No. 3.



is made is the hard reddish clay very similar to that of the bowl in Pl. XXVI.<sup>1</sup>

The fragments of figurines found in the vicinity of this building were a part of a human figure, a part of a duck and a part of a figurine of a horse.

#### PITHOS-BURIALS.

Burials in jars have already been noted in connection with the Vrokastro houses, the chamber-tombs, and the bone-

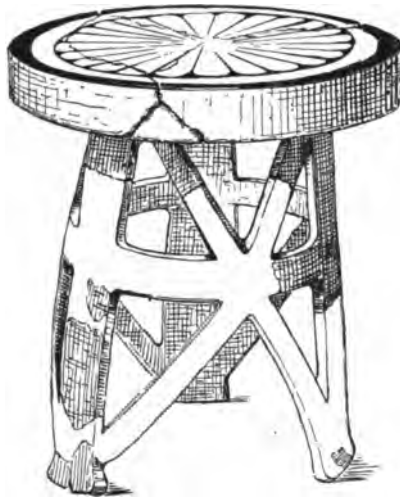


Fig. 105. Clay Table from Building Adjacent to Bone-Enclosures (1 : 5).

enclosures. Three other instances of such burials in jars remain to be enumerated, which were unassociated with either tombs or houses. Two were located on one of the eastern spurs of Vrokastro, to which the natives have given the name, Khavga (Xavyá); in a circular pit cut from the hard white soil. One pithos was on its side, and contained the unburned bones and the teeth of a child. The mouth of the jar was closed with two

<sup>1</sup> For a ribbed base with rectangular perforations see, *e. g.*, a krater from Melos published in *Jahrbuch*, 1899, Vol. XIV, p. 34, Fig. 11, and *ibid.*, p. 80, Fig. 33.

large disks of stone like those found in the Vrokastro houses and in Chamber-Tomb I. The other jar appeared at a lower level and, like Minoan burial jars, was inverted and wedged into position by large stones. The bones inside were those of an adult; they showed no traces of burning. The only object found with this burial was the bürgerkanne of Pl. XXVII, 1.



Fig. 106. Geometric Krater from Building Adjacent to Bone-Enclosures  
(about 1 : 4).

It has the usual air-hole on the shoulder and knob on the false spout. Its decoration presents close analogies to that of the pottery from Chamber-Tomb I; the fern-like fringe on the hatched triangles and the solidly black triangle are both characteristic of the earlier phase of Cretan geometric style, of which the best examples were afforded by the pottery from Chamber-Tomb I.

The other jar-burial was found adjacent to Chamber-Tomb IV on Amigdali. The pithos was on its side and contained the unburned remains of an adult. One cup and two bits of perforated steatite made up the burial gifts.

#### INTERMENT ROCK-SHELTER.

Lastly, in enumerating the various types of interments found on Vrokastro, mention should be made of a burial under an overhanging ledge of rock which runs along the southern edge of the Karakovilia slope. Several skeletons had been interred here; that they belonged to the geometric period was certain, for geometric sherds and a small unpainted jug like that of Fig. 99 C were found with them.<sup>1</sup>

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<sup>1</sup> Cf. Mr. Hogarth's brief description of geometric cave-burials in Zakro, *B. S. A.* VII, p. 148 and *B. S. A.* XII, p. 3.

## CONCLUSION.

The proportion of incineration and of inhumation in the tombs described may be readily seen in the accompanying diagram. In cases where the number of skeletons could be

	CHAMBER-TOMBS.							BONE-ENCLOSURES.											
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12
Inhumated Skeletons.....	Child's	24	7			3							Child's	Child's					
Skeletons in Jars.....				1	1														
Doubtful.....	+		+				+												
Cremated Remains in Earth.	+			+	+			+	+	+	+	+	+	+	+	+	+	+	+
Cremated Remains in Jars...	3			+						+									

Diagram Showing the Relation of Incineration and Inhumation in the Burials at Vrokastro.

observed the number is noted in the diagram, otherwise the occurrence of a given type of burial is indicated by a cross. When the bones are those of a young child, that fact is also noted. The liabilities to error in these observations are chiefly two: it is possible that cremated remains found loose in the earth had once been enclosed in jars, inasmuch as fragments of pottery were invariably found with the ashes and all pottery was broken. This, however, seems improbable in view of the fact that the bones were themselves so scattered. Again it is possible that distinction was not correctly drawn between burned and unburned bones. The difference between bones from which the flesh has been burned away and those from which the flesh has decayed away is a slight one, and it is

unnecessary to suppose that the fire in every case devoured the bones. This difficulty has, however, been at least partially obviated by relegating to a doubtful class the cases where the signs of burning were not unmistakable. Counting out such doubtful cases and also child-burials, the proportion of cremation in the chamber-tombs was fifty per cent; in the pithos-burials, which were distinct from tombs, cremation does not occur; in the bone-enclosures it reaches one hundred per cent. The natural inference from these facts is, of course, that the bone-enclosures are later than the built tombs. Until cremation had been universally adopted, chamber-tombs were still built for the dead, but when entire skeletons were no longer buried, and less space was needed, the simpler and easier method was adopted of burying ashes in the small compartments of bone-enclosures.

If now this supposition be correct and the bone-enclosures are later than the tombs, the difference in method of burial will furnish what the stratification of Vrokastro did not, a line of demarcation between the earlier and later phases of the geometric civilization. It remains to review the pottery and bronzes to see if differences are observable.

One difference is salient. The *bügelkanne* which occurred in every chamber-tomb except No. 4, which, it will be remembered, was nearly empty, did not once occur in the bone-enclosures. Other shapes reminiscent of Mycenæan ceramic art and frequent in the chamber-tombs were lacking in the enclosures. These were the *kylix*, the *askos*, and the duck-shaped vase. With the exception of one flask from Bone-Enclosure VII and of one *krater* from Bone-Enclosure XII, these shapes were also lacking in the later type of interment. Types of pottery characteristic of the enclosures were the *hydria*, the geometric

amphora, and the small jugs of Fig. 97. The potsherds from these burials indicated that bowls with panel decoration were also characteristic. A comparative study of shapes, however, indicates neither that there was a hard and fast line between the ceramic art of the two periods, nor that separate interments of the two types were of the same date. Several shapes, the cup of Fig. 79, the small oinochoe, the flaring bowl, Fig. 99 D, are common to both. So indeed is the geometric type of amphora, although it is noteworthy that both this shape and the hydria occurred but once in the chamber-tombs and that in No. III which contained much less that was reminiscent of Mycenæan art than the others.

As regards design, it is observable that the ornament is applied to vases from the tombs less compactly than to those from the enclosures. Together with this close style of ornament goes a tendency to confine the ornament to a panel and to cover the rest of the vase either with solid black or with closely drawn horizontal bands.

It must be admitted, however, that the force of these conclusions is somewhat weakened by the fact that the pottery from the enclosures was much less numerous than in the chamber-tombs. Fibulæ, on the other hand, were even more numerous, and the evidence afforded by them accords with that yielded by the pottery. Two types frequent in the enclosures were absent in the built tombs. These are the symmetrical beaded fibula, Pl. XX A, B, G, and J, and the geometric fibula of Pl. XX E, H, and I. Morphologically, these types are both developments from a plainer type of pin like that of Pl. XX C, D, and F, found in the tombs.

We are thus warranted, I believe, in dividing the geometric remains of Vrokastro into an earlier and a later period accord-

ing to the method of burial practiced. Whether such a division will hold good for other Cretan sites of the iron age is uncertain. Both at Courtes and Rusty Ridge, Kavousi, vases of the fully developed geometric style were found in chamber-tombs. There is, however, a possibility that tombs built in the period of the quasi-geometric style were re-used in the succeeding era. Moreover, there is some evidence that elsewhere also a difference in method of burial differentiated these two periods. Mr. Hogarth found vases parallel to those from the bone-enclosures in "an oblong pit, roofless," which he seems to distinguish from tholoi. This may indicate another modification of the earlier chamber-tomb now rendered superfluous by the universal adoption of cremation.

But even if there shall be found to be local variations as to the time when chamber-tombs were abandoned and as to the type of tomb which succeeded them, this will not impair, I believe, the usefulness of the distinction indicated by the evidence at Vrokastro.

Questions of chronology now confront us. Before considering them it may be well to review the successive periods which have been traced at Vrokastro. The Middle Minoan period, since it is separated from the subsequent history of the site which chiefly concerns us by the long interval of the Middle Minoan III, the Late Minoan I, and the Late Minoan II periods, may be dismissed with two observations: First, that the fact of a Middle Minoan settlement on Vrokastro is at variance with the current view that Minoan sites are to be found in low-lying areas; and second, that it is rare to find in eastern Crete pottery of the Middle Minoan period without finding above it pottery of the Late Minoan period.

Perhaps it was only the people of this latter period who did not live on hills.

We come now to the main settlement on Vrokastro which lasted from the end of the bronze age nearly to the dawn of classical Greece. Three periods may be distinguished; they are as follows.

I. The late Mycenæan period represented by the pottery from below floor levels in the town. Associated with this pottery were the fibulæ of Pl. XIX A and B. This period was not represented in the tombs at Vrokastro, but at other Cretan sites have been found larnakes and chamber-tombs of this era.<sup>1</sup> This pottery is analogous to the L. M. IIIb class of Mr. Dawkins, to the reoccupation style of Gournia, and to that of Tomb B at Moulia.<sup>2</sup> Some of this pottery is classed by Dr. Mackenzie as Achæan and is grouped by him with the succeeding division of our classification. That the closest relation exists between these two classes is indisputable and that Achæan influence had already made itself felt, is probable, but the fact (*a*) that this pottery differs materially from that found in the chamber-tombs at Vrokastro, and (*b*) that pottery of this type is not usually found associated with cremated burials, warrants, I believe, its separation from pottery of the period of the quasi-geometric style.

II. The period of the quasi-geometric style, represented by the pottery from the chamber-tombs, which was associated with both cremated and uncremated remains, and with iron implements. The fibulæ of this period are those intermediate

<sup>1</sup> Boyd-Hawes, *Gournia*, pp. 45 and 46; *B. S. A. VIII*, p. 303.

<sup>2</sup> The cremated remains in Tomb A at Moulia belong, apparently, with the pottery shown in *Εφ. Αρχ.*, 1904, p. 27, Fig. 6.



between the fiddle-bow type and the beaded fibula. Emphasis may again be placed on the prevalence during this period of the Cypriote type of krater, which, as Dr. Mackenzie suggests, brings this class into connection with the warrior vase of Mycenæ. In Crete, pottery of this type has been found in Tholos 6 at Knossos,<sup>1</sup> in the earlier tombs of Kourtes,<sup>2</sup> at Erganos,<sup>3</sup> at Thunder Hill, Kavousi,<sup>4</sup> and at Patela.<sup>5</sup> Outside Crete the closest parallels are to be found at *Salamis*,<sup>6</sup> at Assarlik,<sup>7</sup> and at Skyros and Theotoku in Thessaly.<sup>8</sup>

III. The geometric period represented by the pottery from the bone-enclosures. This pottery in shape and decoration is analogous to that found in the Dipylon cemetery, on Thera, and other geometric sites. It is invariably associated with cremated remains. The fibulæ of this period include the types of the foregoing period and also the beaded and geometric types.

In determining the date of this last period, the close correspondence of the fibulæ from the enclosures with those found in Schiff's grave on Thera is of prime importance. All types found in the Theran grave are present in the enclosures with the exception of the spectacle type and the *kleinasiatisch* fibula.<sup>9</sup> The absence of these implies that the Vrokastro enclosures are slightly earlier in date than the Theran tomb, which was assigned by Dragendorff to the seventh century.

<sup>1</sup> *B. S. A.* VI, p. 84.

<sup>2</sup> *A. J. A.*, 1901, Pl. VIII.

<sup>3</sup> *ibid.*

<sup>4</sup> *Id.*, Pls. I and II.

<sup>5</sup> *A. J. A.*, 1897, p. 252.

<sup>6</sup> *Wide, loc. cit.*

<sup>7</sup> *J. H. S.* VIII, p. 69, Figs. 4-8.

<sup>8</sup> Wace and Thompson, *op. cit.*, pp. 208-216, and p. 255.

<sup>9</sup> *Loc. cit.*, p. 300; *Abb.*, 489, t-w.

The resemblance of the small jugs of Fig. 97 to those from Schiff's grave confirms this conclusion. At Aigina, beaded fibulæ were assigned to the end of the eighth and the beginning of the seventh century.<sup>1</sup> The spectacle fibula is generally held to date from the early part of the seventh century B. C.<sup>2</sup> We, therefore, obtain as provisional dates for the third period the eighth century B. C. If the absence of the spectacle fibula be a matter of chance, an even later date might be assigned.

The best evidence for dating the period of the quasi-geometric style is afforded by the tripod from Chamber-Tomb I and by the fibulæ. Accepting Furtwängler's date for the Enkomi tripod as about 1000 B. C., we may assign the second class of pottery to the beginning of the first millennium B. C., and, allowing an equally long interval for either division of the geometric style, we obtain 1000–850 B. C. as provisional dates for the period of the quasi-geometric style and 850 to 700 B. C. for the period of the mature geometric style.

Of still more absorbing interest than chronological problems are questions of ethnology. If geometric pottery be held in general to be the product of the Dorian race, then the third period represents the Dorian invasion of Crete. The pottery of the first period, in view of its resemblance to mainland types, must be assigned to the Mycenæans. Yet even in this period a new influence is observable. Mr. Dawkins and Dr. Mackenzie have shown that the introduction of a Cypriote type of krater and of the geometric type of bowl indicate affinities<sup>3</sup> with the succeeding period. This new influence I believe Dr. Mackenzie right in ascribing to the Achæans. To the

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<sup>1</sup> *Aigina*, pp. 474–475.

<sup>2</sup> *B. S. A.* XIII, p. 72.

<sup>3</sup> *B. S. A.* IX, p. 320 and *id.*, XIII, p. 434.

Achæans then may be provisionally assigned the quasi-geometric pottery of the second class.<sup>1</sup>

If these theories be correct, the remains of Vrokastro record three great invasions of Crete from the North, those of the Mycenæans, the Achæans, and the Dorians.

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<sup>1</sup> Further evidence for this theory is afforded by the excavations carried on by Messrs. Wace and Thompson at Halos in Achaia Phthiotis, where pottery has come to light, which bears the closest resemblance to that from Vrokastro. I regret that the very useful article in *B. S. A.* XVIII, pp. 1-29 reached me so late as to make it impossible to compare the two wares in detail.

## APPENDIX.

## NOTE ON AN EARLY MINOAN II CAVE-BURIAL AT AYIOS ANDONI.

In 1912, while the weather was still so unsettled as to prevent pitching camp on Vrokastro, trial excavations were conducted in the neighborhood of Kavousi. Along the bed of the river which runs to the north of the village were found several rectangular chamber-tombs analogous to those described in the foregoing report but containing little else than fragments of bones and small bügelkannen of poor clay. Of greater interest was an Early Minoan II burial located in a cave-like recess on the steep hillside immediately above the little church of Ayios Andoni (Ἅγιος Ἀνδρόνι).

The objects found in this grave were as follows.

1. Veined marble bowl, intact, ht. .67 m., diam. .127 m.
2. Fragments of an alabaster jug similar to that published by Mr. Seager in *Explorations on the Island of Mochlos*, Pl. V, VI, 2.
3. Sherds of Early Minoan II red and black mottled ware; of a fine polished gray ware; and of Early Minoan III light on dark ware.
4. Clay pot with suspension handles of reddish ware, ht. .063 m.
5. Small jug of red clay, ht. .105 m., similar to that published by Mr. Seager, *loc. cit.*, Fig. 7, II b.
6. Three-legged cooking-pot, ht. .094 m.
7. Large gourd-shaped vase, ht. .137 m., with suspension

handles. The objects other than pottery from this tomb are shown in Fig. 107. They are as follows.

1. Steatite beads of various shapes, conspicuous among which are three cylindrical beads with ribbed surface.

2. Two bronze blades, closely analogous to blades from Mochlos, *loc. cit.*, Fig. 45.

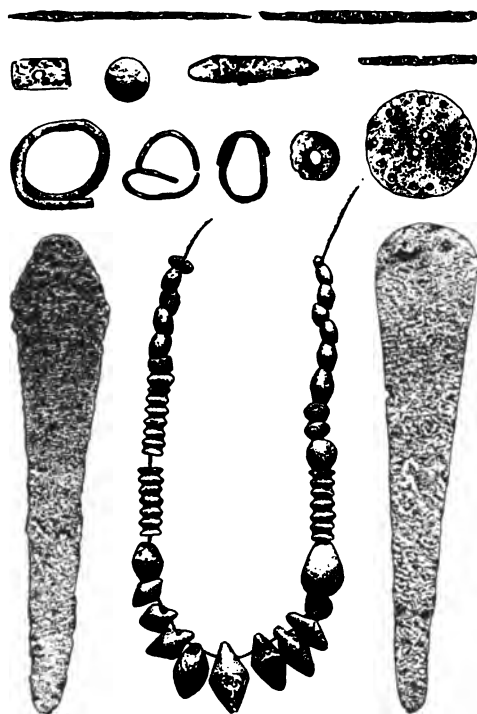


Fig. 107. Early Minoan II Objects from a Cave Burial at Ayios Andoni near Kavousi (2 : 3).

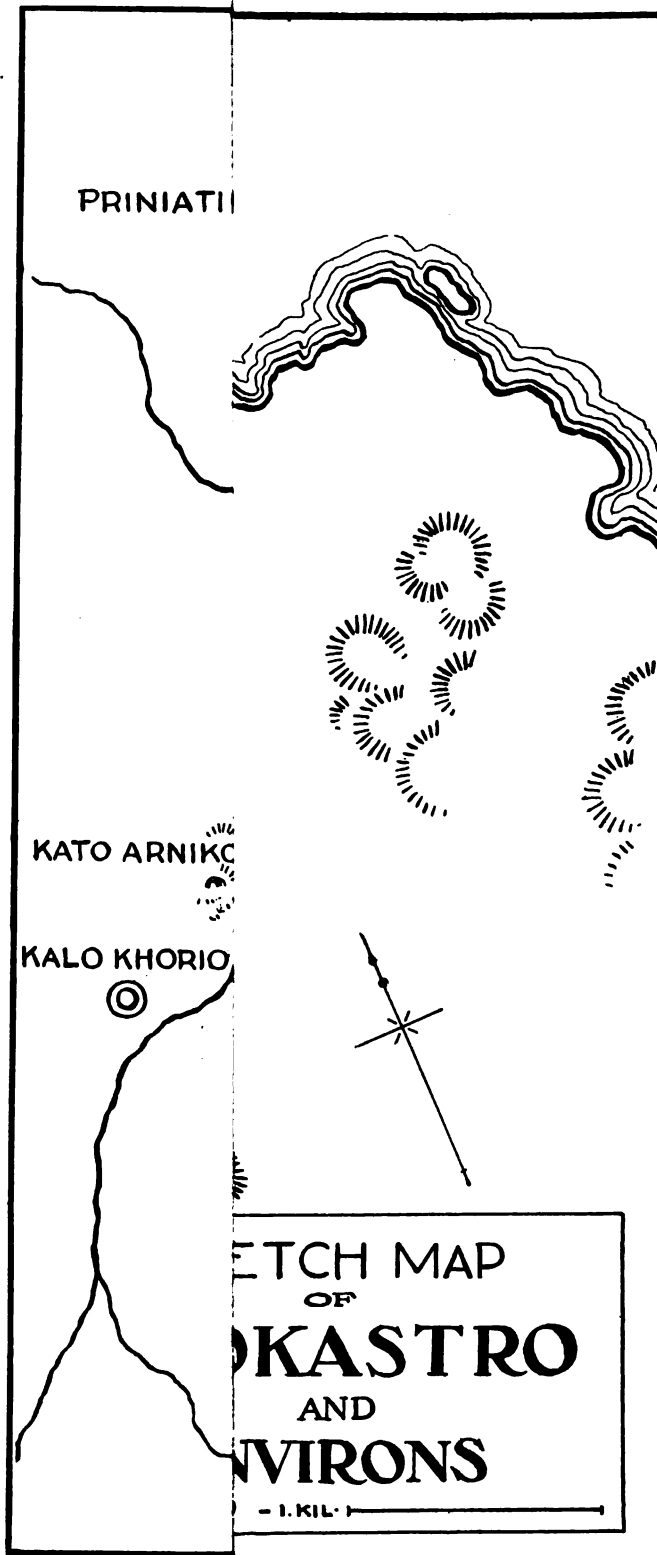
3. Silver disk with central and marginal perforations.
4. Bronze borers.
5. Ivory pendant in the form of a pig, Fig. 108.
6. Three curls, two of silver, one of bronze, for confining locks of hair. These curls are similar to those found in the

second stratum at Troy (W. Doerpfeld, *Troia und Ilion*, *Beilage* 43, p. 352 and p. 358), and furnish accordingly further evidence for equating the second stratum at Troy with the Early Minoan period in Crete.



Fig. 108. Ivory Pig from Cave Burial, Ayios Andoni, near Kavousi (2 : 3).



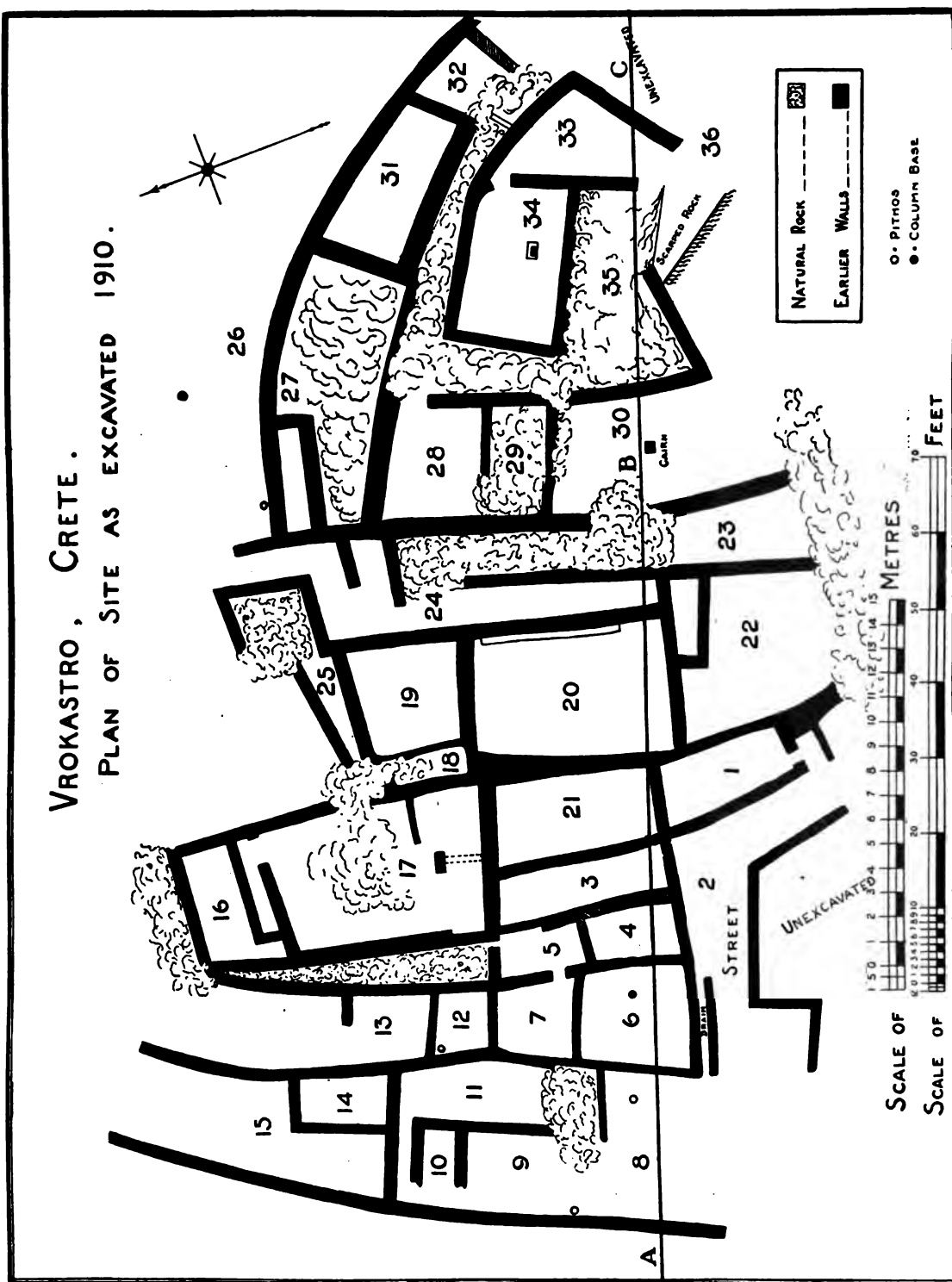




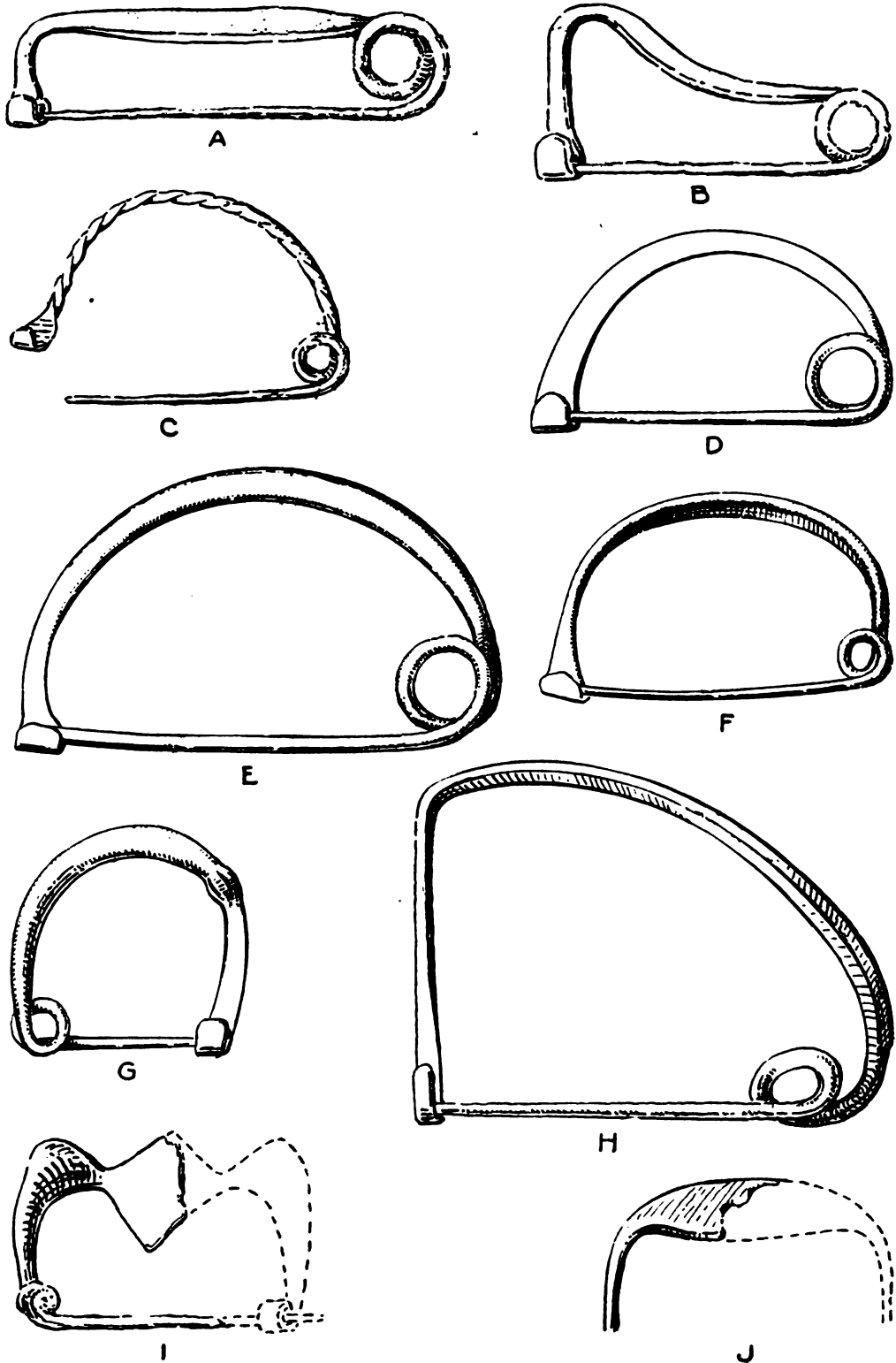


# VROKASTRO, CRETE.

PLAN OF SITE AS EXCAVATED 1910.

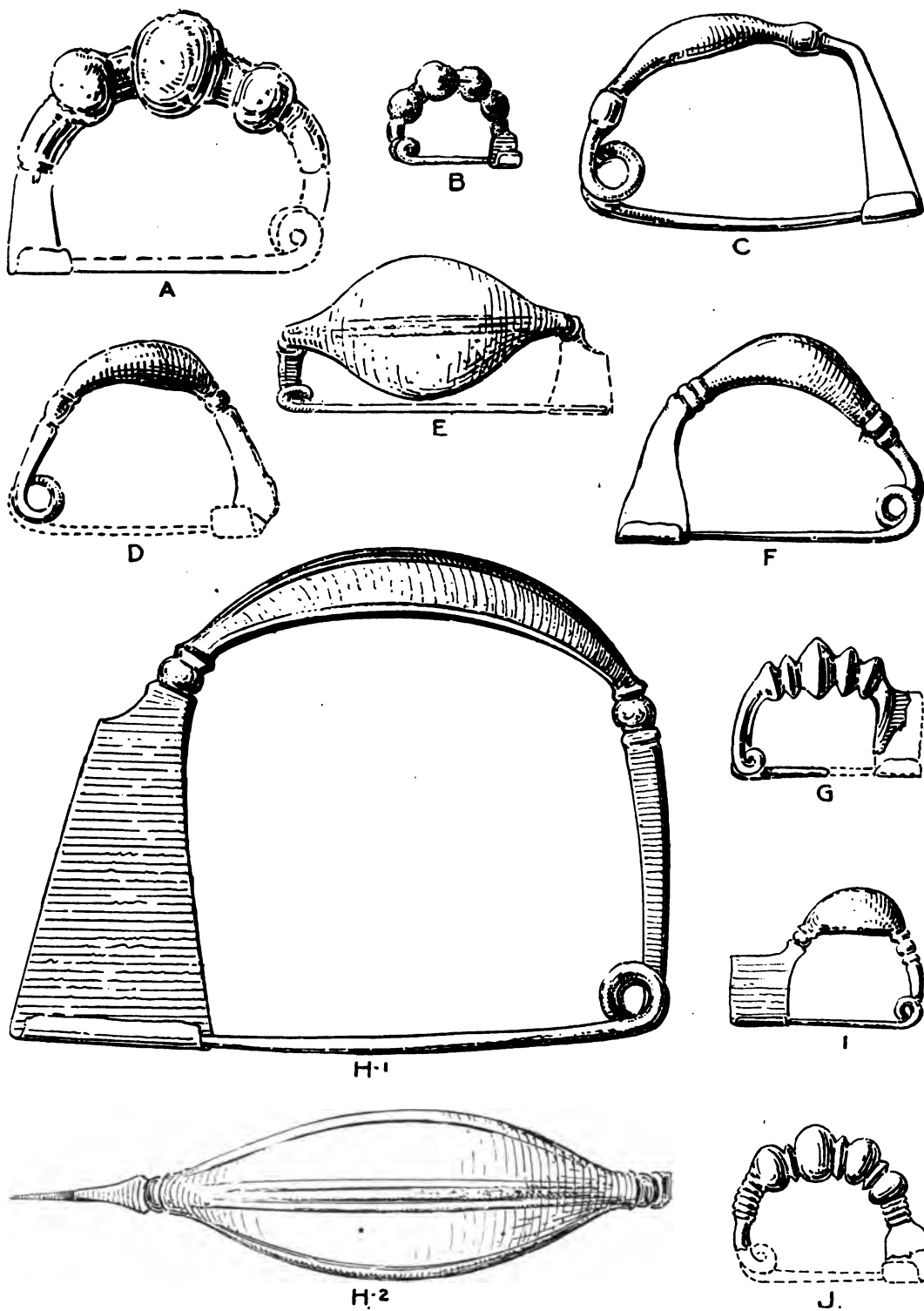






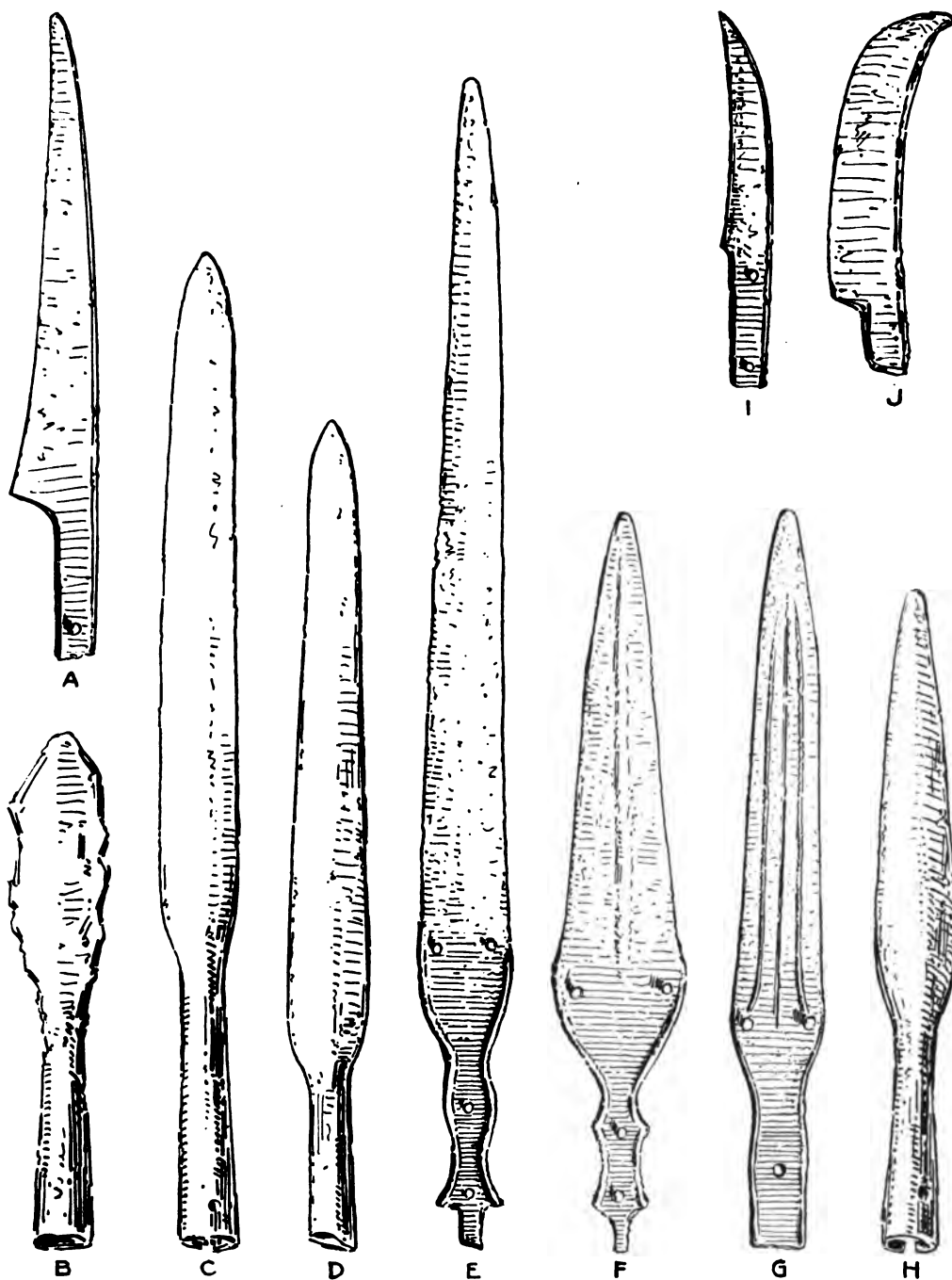
FIBULÆ FROM TOWN AND TOMBS (1:1)





TYPES OF FIBULÆ FROM TOWN AND TOMBS (3 : 4).

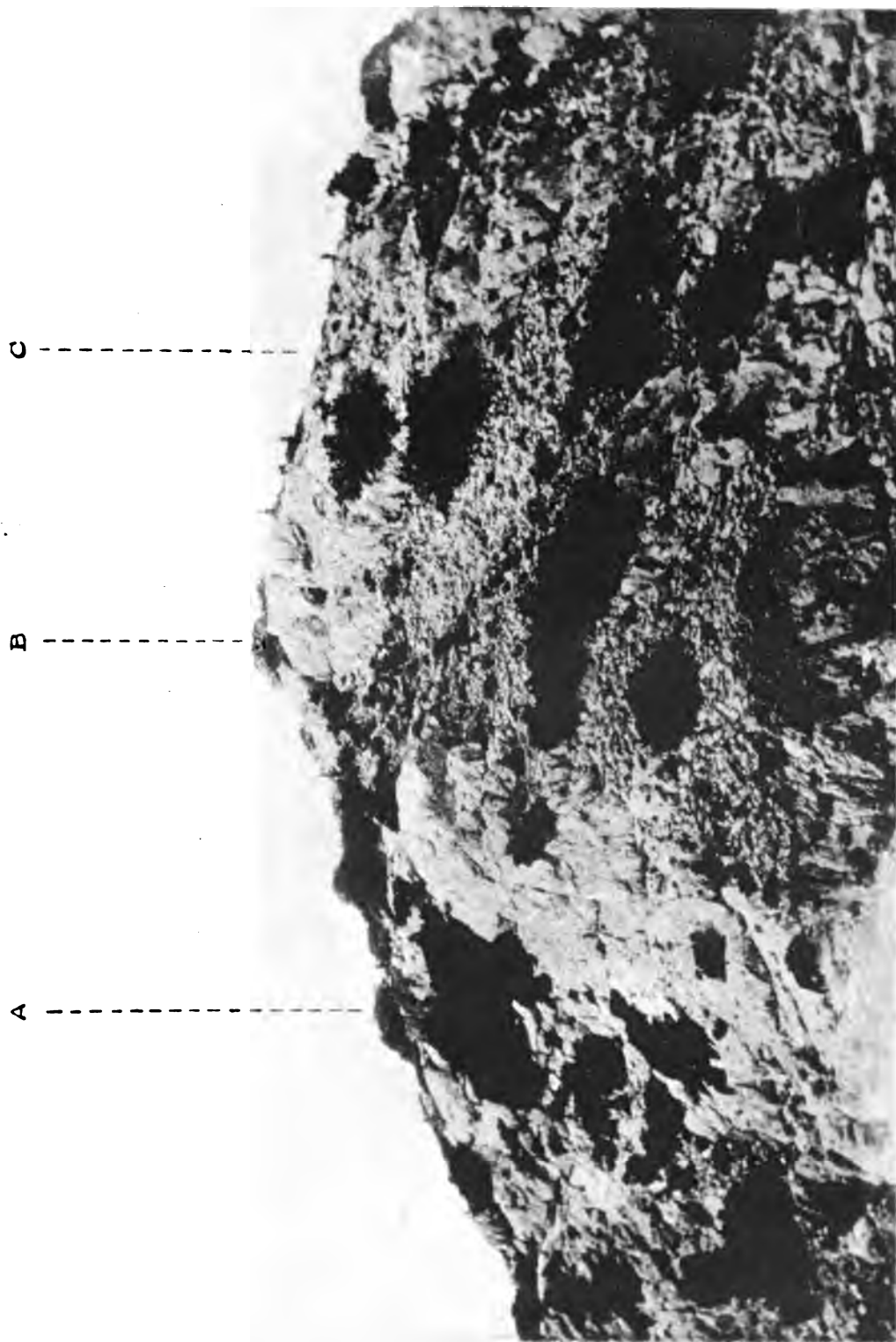




TYPES OF BRONZE AND IRON BLADES FROM TOWN AND TOMBS (1 : 2).

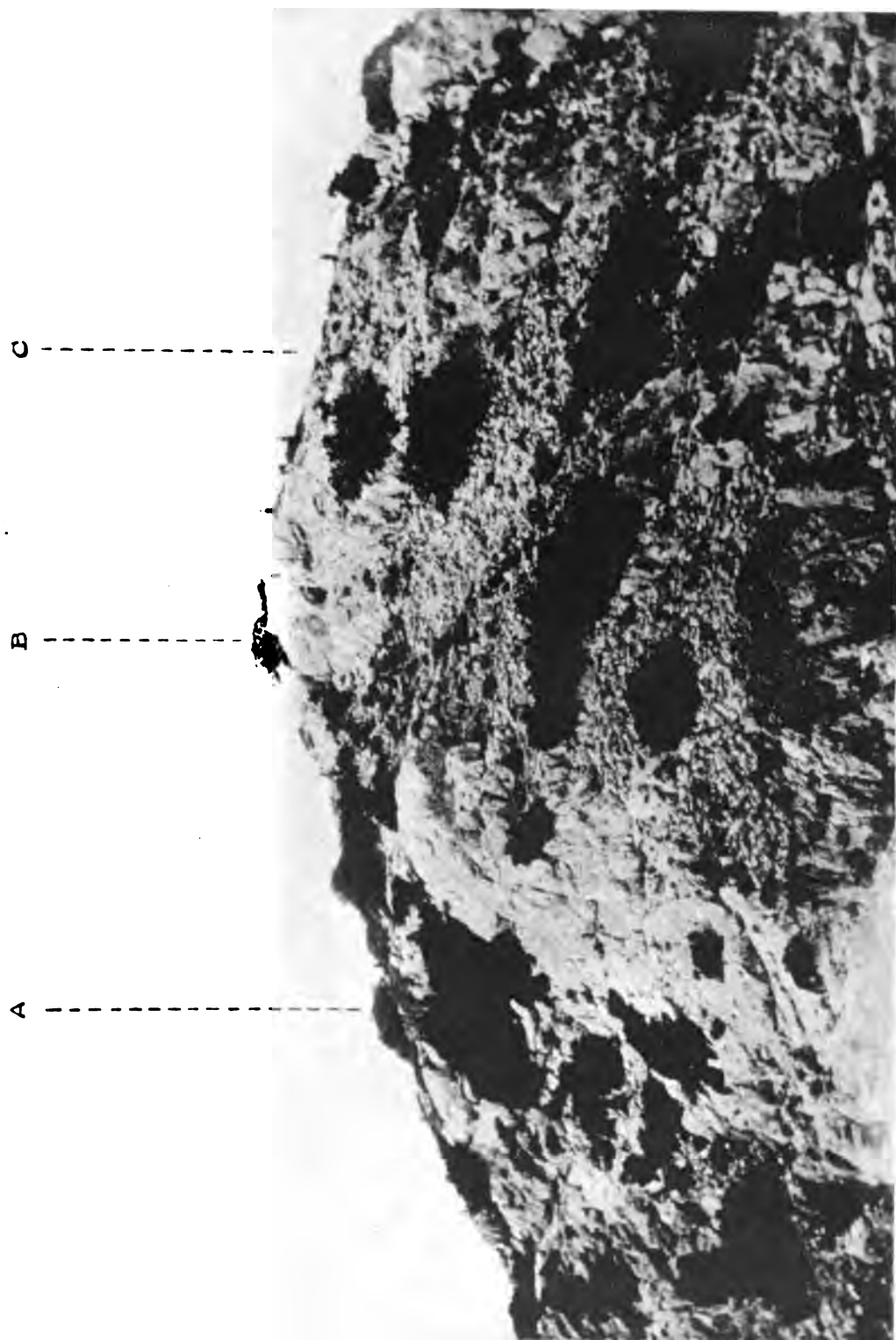






VROKASTRO FROM THE SOUTH





VROKASTRO FROM THE SOUTH





1. VIEW OF EXCAVATED ROOM, VROKASTRO, SHOWING THE ROUGH LEDGES ABOVE WHICH FLOORS WERE BUILT.
2. BLOCK OF DRESSED LIMESTONE FROM BUILDING NEAR BONE-ENCLOSURES, KARAKOVILIA.
3. STAIRWAY BETWEEN ADJACENT ROOMS VROKASTRO.





DOORWAY OF HOUSE, VROKASTRO



BUILDING ADJACENT TO BONE-ENCLOSURES. KARAKOVILIA.







1. MIDDLE MINOAN JUG FROM LOW LEVEL OF ROOM 27, VROKASTRO. SCALE 1 : 2.  
2. KYLIX PAINTED IN THE QUASI-GEOMETRIC STYLE FROM CHAMBER-TOMB 1, KARAKOVILIA. SCALE 1 : 2.





1. MIDDLE MINOAN JUG FROM LOW LEVEL OF ROOM 27, VROKASTRO. SCALE 1 : 2.
2. KYLIX PAINTED IN THE QUASI-GEOMETRIC STYLE FROM CHAMBER-TOMB 1, KARAKOVILIA. SCALE 1 : 2.





BOWL OF THE MATURE GEOMETRIC STYLE FROM ROOM 22, VROKASTRO. SCALE 1 : 2.





1. BÜGELKANNE FROM PITHOS-BURIAL, KHAVGA. SCALE 1 : 2.
2. BOWL AND COVER FROM CHAMBER-TOMB III, KARAKOVILIA. SCALE 1 : 2.
3. HYDRIA FROM TOWN, VROKASTRO. SCALE 2 : 5.
4. OINOCHOE FROM CHAMBER-TOMB III, KARAKOVILIA. SCALE 2 : 5.







AMPHORA OF THE MATURE GEOMETRIC STYLE. VROKASTRO. SCALE. 1 : 5.





OPEN-WORK VASES FROM CHAMBER-TOMB I, KARAKOVILIA. SCALE 1 : 2.





COVERED BOWLS OF THE QUASI-GEOMETRIC STYLE FROM CHAMBER TOMB I, KARAKOVILIA. SCALE 1 : 2.

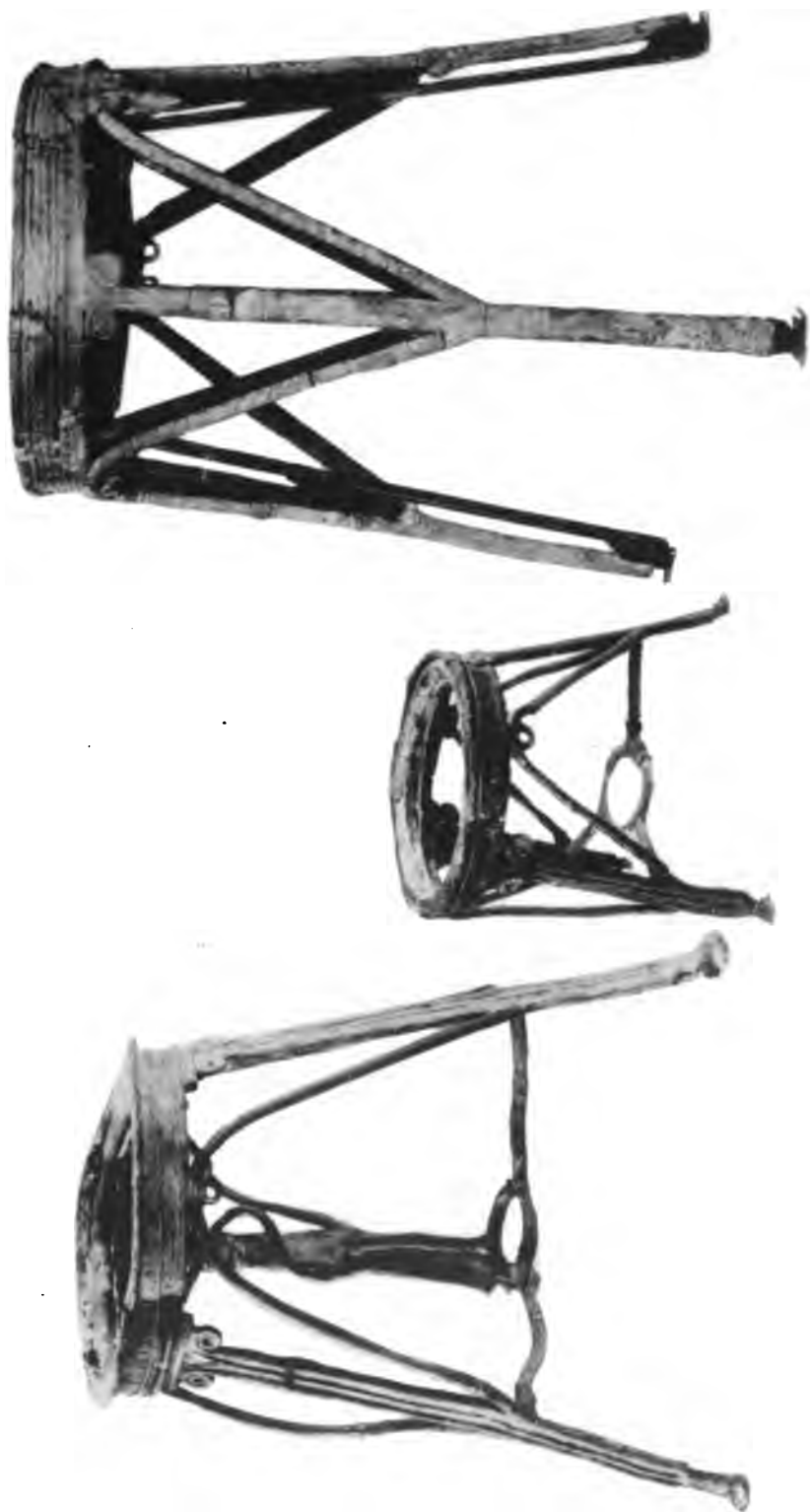




AMPHORA OF THE QUASI-GEOMETRIC STYLE FROM CHAMBER TOMB I,  
KARAKOVILIA. SCALE 1 : 2.

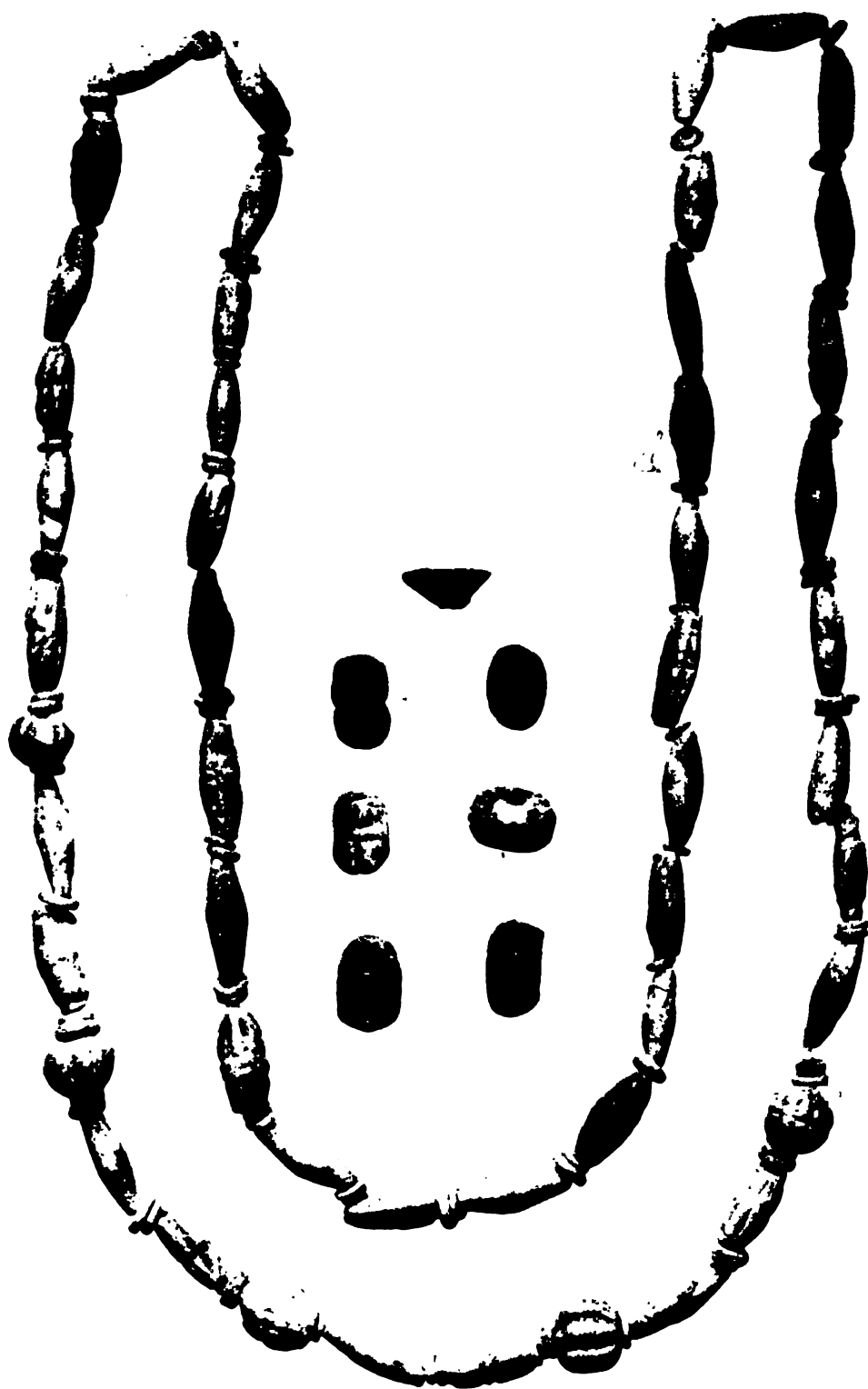






1. BRONZE TRIPOD FROM CHAMBER TOMB I, KARAKOVLIA. HEIGHT .377 M.
2. BRONZE TRIPOD, CANDIA MUSEUM, FROM GRAVE 3, GEOMETRIC CEMETERY, KNOSSOS. HEIGHT .18 M.
3. BRONZE TRIPOD, BRITISH MUSEUM, FROM GRAVE 58, ENKOMI, CYPRUS. HEIGHT .43 M.





FAIENCE BEADS AND SEALS FROM CHAMBER TOMB I, KARAKOVILIA  
AND CHAMBER TOMB IV AMIGTHALI. SCALE 1 : 2.



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